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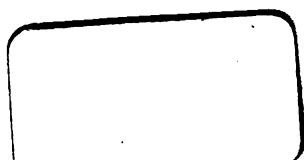
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JOURNAL
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ASIATIC SOCIETY OF BENGAL.

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PART I. (HISTORY, ANTIQUITIES, &c.)

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THE PHILOLOGICAL SECRETARY.

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"It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish, if such communications shall be long intermitted; and it will die away, if they shall entirely cease." SIR WM. JONES.

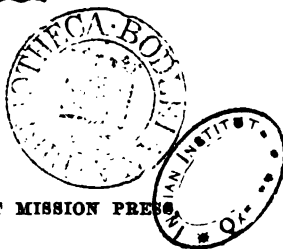
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JOURNAL
OF THE
ASIATIC SOCIETY OF BENGAL.

Part I.—HISTORY, LITERATURE, &c.

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No. I.—1878.  
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*The Mo'allaghah of Zuheyr rendered into English, with an introduction
and notes.—By C. J. LYALL, C. S.*

How war arose between 'Abs and Đubyân from the Race of Dâhis : who fell therein, and who slew them : what famous Days were gained by either kin : what songs were made to tell of valiant deeds done, and what dirges over brave men that died : how the heads of Đubyân were slain at the Cistern of el-Habâ'ah, and how 'Abs wandered forth thereafter through many strange lands : all this may be told at another season. What is now to be related is the manner in which peace was made, and the brother tribes reconciled together.

' There was a certain lord of Đubyân, by name el-Hârith son of 'Auf son of Abû Hârith, of the house of Gheyḏ son of Murrah son of Sa'd, great in wealth and fame among the kindred of Fezârah. He said one day to his uncle's son, Khârijev son of Sinân—"Thinkest thou that any whose daughter I asked in marriage would deny her to me?" "Yes," he answered; "Who?" said el-Hârith. "Aus son of Hârith son of La'm of Tayy'," said Khârijev. Then said el-Hârith to his servant—"Mount with me." So they mounted one camel together, and rode until they came to Aus son of Hârith in his own land; and they found him in his house. And when he saw el-Hârith son of 'Auf, he said—"Hail to thee, O Hârith:" "And to thee," said el-Hârith. "What has brought thee hither, O Hârith?" said Aus. "I have come a-wooing," answered he. "This is not the place for thee," said Aus, and turned his back upon him and spoke no

word more. Then Aus went in to his wife in anger. Now she was a woman of 'Abs: and she said—"Who was the man who stopped at thy door, with whom thou hadst such short speech?" He answered—"That was el-Hārith son of 'Auf son of Abū Hārithēh the Murri, the lord of the Arabs." "What befell thee that thou didst not bid him alight?" asked she. "He dealt foolishly with me," said he. "How so?" she asked. "He came a-wooing," he answered. "Dost thou wish to wed thy daughters?" she asked. "Yes," said he. "And if thou wilt not give one to the lord of the Arabs to wife, to whom then wilt thou wed her?" "Nay," he answered, "the thing is done." "Nay but," said she, "make amends for what thou hast done." "How?" he asked. "Follow after him and bring him back with thee." "How should I do so, when that has befallen which has befallen between me and him?" She answered—"Say to him—'Thou foundest me in anger because thou didst propound to me suddenly a matter whereof thou hadst not spoken to me before, and I was not able at the time to answer thee but as thou heardest: but now return, I pray thee, and thou shalt find with me all that thou desirest': verily he will do as thou askest." So Aus mounted and rode after those twain. "Then," (says Khārijeh son of Sinān, who was with el-Hārith and tells the tale,) "By God! I was journeying on our way, when I chanced to raise mine eyes, and saw Aus riding after us. And I went forward to el-Hārith, but he spoke nought to me by reason of the grief that was in him; and I said to him—'Here is Aus son of Hārithēh following us.' He answered—'And what have we to do with him? pass on.' And when Aus saw that we tarried not for him, he cried after us—'O Hārith! wait for me a moment.' So we waited for him, and he spoke to us that speech which his wife had made for him; and el-Hārith returned with him in gladness. And I heard that Aus when he went into his house said to his wife—'Call to me such an one'—naming the eldest of his three daughters; and she came forth to him. And he said to her—'O my daughter, this is el-Hārith son of 'Auf, a lord of the Arabs: he has come asking a boon, that I should wed to him one of my girls; and I purposed to wed thee to him: what sayest thou thereto?' She answered—'Do it not.' 'Why?' he asked. She said—'I am a woman uncomely in face, faulty in temper: I am not his uncle's daughter, that he should regard my kinship with him, nor is he thy neighbour in the land, that he should be ashamed before thee; and I fear lest one day he see in me something which may displease him, and divorce me, and there befall me therein what is wont to befall.' He said: 'Arise—God bless thee! Call to me such an one'—naming his second daughter: and she called her. And he spoke to her as he had spoken to her sister, and she answered him after the same fashion, saying—'I am ignorant and awkward: there is no skill in my hand. I fear lest he see in me something to

displease him, and divorce me, and there befall me therein what thou knowest. He is not mine uncle's son, that he should regard my right, nor thy neighbour in thy land, that he should be ashamed before thee.' He said: 'Arise—God bless thee! Call to me Buheysseh'—naming his youngest daughter; and she was brought to him. And he spoke to her as he had spoken to her two sisters. And she said—'As thou wilt.' He said—'Verily I offered this to thy two sisters, and they refused.' 'Nay but I,' said she (and he had not told her what the two had said), 'By God! am the fair in face, the skilful with her hands, the noble in nature, the honourable in her father; and if he divorce me, God will bring no good upon him thereafter.' And he said—'God bless thee!' Then he came forth to us and said—'I wed to thee, O Hārith, Buheysseh daughter of Aus.' 'I accept her,' said el-Hārith. Then Aus bade her mother make her ready and deck her for the wedding; and he gave command that a tent should be pitched for el-Hārith, and lodged him therein. And when his daughter was decked out, he sent her in to el-Hārith. And when she was brought in to him, he stayed but a little space, and came forth to me; and I said—'Hast thou prospered?' 'No,' said he. 'How was that?' I asked. He answered—'When I put forth my hand to take her, she said "Stay! doest thou thus before my father and my brethren? No, by God! this is not fitting!"' Then he commanded that the camels should be made ready, and we started on our way, taking her with us. And we journeyed a space; then he said to me—'Go on ahead;' and I went on; and he turned aside with her from the road. And he had tarried but a little when he joined me again; and I said—'Hast thou prospered?' 'No,' he answered. 'Why?' said I. He answered—'She said to me—"Doest thou with me as with a woman-slave that is hawked about for sale, or a captive woman taken in battle? No, by God! until thou slay the camels, and slaughter the sheep, and call the Arabs to the feast, and do all that should be done for the like of me." ' I answered—'By God! I see that she is a woman of a high spirit and understanding; and I hope that she will be to thee a wife who shall bear thee noble sons, if God will.' And we travelled on until we came to our country. And el-Hārith made ready the camels and the sheep, and prepared a feast; then he went in to her. And in a little while he came forth to me, and I asked him—'Hast thou prospered?' 'No,' said he. 'How was that?' I asked. He answered: 'I went in to her and said—"Lo! I have made ready the camels and the sheep as thou seest;" she answered me—"By God! I was told that thou hadst a nobleness which I do not see in thee." "How so?" I asked. She said—"Hast thou a light heart to wed women while the Arabs are slaying one another?" "What wouldst thou have me do?" I asked. She said—"Go forth to these thy kindred, and make peace between them: then return to thy wife, and thou shalt not miss what thou

desirest.”’ ‘By God!’ said I, ‘a noble and wise woman! and she has spoken a goodly word!’ And he said—‘Come forth with me’: so we went forth, and came to the two tribes, and walked between them with peace. And the peace was made on the condition that the slain should be reckoned up, and the price of the excess taken from that tribe who had slain more of the other. And we bore the burden of the bloodwits; and they were in all three thousand camels, which were paid in the space of three years. And we returned home with the fairest of fame; and el-Ĥārith went in to his wife, and she bore him sons and daughters.” So said Khārijeh; and these two, Khārijeh and el-Ĥārith, are the twain whom Zuheyr praises in his song. Such is the testimony of Moḥammed son of ‘Abd-el-‘Aziz el-Jauhari.

Now while ‘Abs and Ḍubyān were covenanting together for peace, a thing befell that came nigh to setting them at war again. ‘Abs had pitched their tents in esh-Sharabbah at a place called Qaṭan, and near them were many tents of Ḍubyān. Now there was a man of Ḍubyān, Ḥoṣeyn son of Ḍamḍam by name, whose father Ḍamḍam had been slain in the war by ‘Antarah son of Sheddād, and his brother Herim by Ward son of Ḥābis, both of the house of Ghālib, of ‘Abs; and Ḥoṣeyn swore that he would not wash his head until he had slain Ward or some other man of the line of Ghālib: but none knew of this oath of his. And el-Ĥārith son of ‘Auf son of Abū Ḥārithah and his cousin Khārijeh son of Sinān had already taken upon themselves the burden of the price of blood, and ‘Abs and Ḍubyān mixed freely together. And a man of ‘Abs, of the house of Makh-zūm, came to the tent of Ḥoṣeyn son of Ḍamḍam and entered therein. “Who art thou, O Man?” said Ḥoṣeyn. “Of ‘Abs,” said he; and Ḥoṣeyn did not cease to ask his lineage until he found that he was of the house of Ghālib; and he slew him. And news of this came to el-Ĥārith son of ‘Auf and Herim son of Sinān his cousin, and it was grievous to them. And the news came also to the men of ‘Abs, and they mounted and rode in a body towards el-Ĥārith’s tent. And when el-Ĥārith heard of the anger that was in their hearts, and how they purposed to slay him in requital for the death of their brother, (for Ḥoṣeyn son of Ḍamḍam was also of the line of Murrah, as was el-Ĥārith son of ‘Auf,) he sent to meet them a hundred camels, and with them his son, and said to the messenger—“Say to them—‘Are the camels dearer to you, or your own lives?’” And the messenger went forth to meet them, and spoke after this wise. And er-Rabī’ son of Ziyād, who was the leader of ‘Abs in that day (—for Qeys son of Zuheyr, their chief in the war, though he counselled the peace, yet took no part therein himself, but withdrew from his kin and went away to ‘Omān, where he became a Christian and spent the remainder of his days in prayer and repentance: for he said—“By God! never again can I look

in the face a woman of Ghatafân : for verily I have slain her father or her brother or some other dear to her") —er-Rabi' cried to his following —" O my people ! your brother has sent you this message—' Are the camels dearer to you, or will ye rather take my son and slay him in the stead of your slain ? ' " And they said—" We will take the camels and be reconciled, and conclude our covenant of peace." So peace was made, and el-Hârith and Herim gained the more praise.

* And Zuheyr made this song to tell of the noble deeds of el-Hârith and Khârijeh, and the rest of the house of Gheyð son of Murrah : for all shared in the peace-making, though the leaders therein were el-Hârith and Khârijeh.

أَمِنْ أُمِّ أَرْفَى دَمْنَةُ لَمْ تَكَلِّ
بَحْرَمَانَةَ الدَّرَاجِ وَالْمَنْكَلِ
وَدَارُ لَهَا بِالرَّقَمَيْنِ كَانَهَا
مَرَاجِيعُ وَشَمٍ فِي نَوَاشِرِ مِعْصَمِ
بِهَا الْعَيْنُ وَالْأَرَاءُ بِمَشِينِ خَلْفَةً
وَاطْلَاهَا يَنْهَضُ مِنْ كُلِّ مَجْنَمِ
وَقَعْتُ بِهَا مِنْ بَعْدِ عَشْرِينَ حَجَّةً
فَلَايَا عَرَفْتُ الدَّارَ بَعْدَ تَوَهُمِ
أَنَا فِي سَفْعَا فِي مُعَرَّسِ مَرْجَلِ
وَنُورِيَا كَجِدْمِ الْخَوْضِ لَمْ يَنْقَلِمِ
فَلَمَّا عَرَفْتُ الدَّارَ قُلْتُ لِرَبْعَهَا
أَلَا أَنْعِمُ صَبَاحًا أَيُّهَا الرِّبْعُ وَأَسْلَمِ
تَبَصَّرَ خَائِلِي هَلْ تَرَى مِنْ طَعَانِي
تَحْمَلُنِ بِالْعَلِيَاءِ مِنْ فَوْقِ جُرْتِمِ
عَلَوْنَ بِأَنْطَاطِ عَنَاقٍ وَكَلَّةِ
وَرَادَ حَوَاشِيهَا مُشَاكُهُ الدِّمِ
وَوَزَنَ فِي السُّوْبَانِ يَعْلوْنَ مِنْهُ
عَلَيْهِمْ دَلُّ النَّاعِمِ الْمُنْعَمِ
بَكْرُونَ بِكُورًا وَاسْتَحَرْنَ بِسُحْرَةٍ
فَنَهْنِ مَلَمَى لِلطَّيْفِ وَمَنْظَرِ
وَزَكْنَ بِهِ حَبِّ الْفَنَاءِ لَمْ يُحْطَمِ
أَنْبِقُ لِعَيْنِ النَّظَرِ الْمَتَّوَسِمِ
فَلَمَّا وَدَدَ الْمَاءَ زُرْقًا جَمَامَهُ
وَمَعْنَ عَصِيَّ الْحَاضِرِ الْمَتَخِيمِ
جَمَلَنَ الْفَنَانُ عَنْ يَمِينِ وَحَزَنَهُ
رَكَمَ بِالْقَنَانِ مِنْ مُحِلِّ وَمُحَرِّمِ

١٥ ظَهَرَ مِنَ السُّبْحَانِ ثُمَّ جَزَعَهُ عَلَى كُلِّ قَيْنِي قَشِيبٍ وَمُفَامٍ

فَأَقْسَمْتُ بِالْبَيْتِ الَّذِي طَافَ حَوْلَهُ
بَيْنَنَا لَنَنَعِمَ السَّيِّدَانِ وَجَدْتُمَا
سَعَى سَاعِيَا غِيْظَ بَنٍ مُرَّةً بَعْدَمَا
تَدَارَكْتُمَا عَبَسًا وَذُبْيَانٍ بَعْدَمَا
٢٠ وَقَدْ قُلْتُمَا إِنَّ نَذْرَكَ السَّلَامِ وَاسِعًا
فَأَصْبَحْتُمَا مِنْهَا عَلَى خَيْرِ مَوَظِنٍ
عَظِيمَيْنِ فِي عَلِيَا مَعَدَّ هَدِيْنَتَا
تُعْفَى الْكُلُومُ بِالْمُنِيْنِ فَأَصْبَحَتْ
يُنَجِّمُهَا قَوْمٌ لِقَوْمٍ غَرَامَةٌ
٢٥ فَأَصْبَحَ يُجْرِي فِيهِمْ مِنْ تِلَادِكُمْ

رَجَالُ بَنُوهُ مِنْ قُرَيْشٍ وَجَرُّهُمْ
عَلَى كُلِّ حَالٍ مِنْ سَحِيلٍ وَمَبْرَمٍ
تَبَزَّلَ مَا بَيْنَ الْعَشِيرَةِ بِالدَّمِ
تَفَانُوا وَدَقُّوا بَيْنَهُمْ عَطَرَ مَنْشَمٍ
بِمَالٍ وَمَعْرُوفٍ مِنَ الْقَوْلِ نَسَامٍ
بَعِيدَيْنِ فِيهَا مِنْ عُقُوقٍ وَمَائِمٍ
وَمَنْ يَسْتَنْجِ كَنْزًا مِنَ الْمَجْدِ يَعْظُمُ
يُنَجِّمُهَا مَنْ لَيْسَ فِيهَا بِجَرِمٍ
وَلَمْ يَهْرِيقُوا بَيْنَهُمْ مَلًا مَحْجَمٍ
مَغَانِمُ شَتَّى مِنْ أَفَالٍ مُزَنَّمِ

٣٠ أَلَا أَبْلَغُ الْأَحْلَافَ عَنِّي رِسَالَةً
فَلَا تَكُنَنَّ اللَّهُ مَا فِي صُدُورِكُمْ
يُؤَخِّرُ فَيُؤَمِّعُ فِي كِتَابٍ وَيُدْخِرُ
وَمَا الْحَرْبُ إِلَّا مَا عَلِمْتُمْ وَدَقُّتُمْ
مَنْ بَعْدُهَا تَبَعُوهَا تَبَعُوهَا ذَمِيمَةٌ
فَتَعْرِكُكُمْ عَرَكَ الرَّحَى بِثَغَالِهَا

وَذُبْيَانِ هَلْ أَقْسَمْتُ كُلَّ مُقَسَمٍ
لِيَخْفِيَ وَمَهْمَا يُكْتَمُ اللَّهُ يَعْلَمُ
لِيَوْمِ الْحِسَابِ أَوْ يُعْجَلُ فَيُنْقَسِمُ
وَمَا هُوَ عَنْهَا بِالْحَدِيثِ الْمَرْجَمِ
وَتَضْرِي أَدَا ضَرْبُهَا قَتَضَرَمِ
وَتَلْقَحُ كَشَافًا ثُمَّ تَنْجِي فَنَقْلُكُمْ

فَتَنْتَجِ لَكُمْ غِلْمَانٌ أَشَامٌ كُلُّهُمْ
كَأَحْمَرِ عَادٍ ثُمَّ تُرْضَعُ فَنَقْطُمِ
فَتُغْلِلُ لَكُمْ مَا لَا تَغُلُّ لِأَهْلِهَا
قَرَى بِالْعِرَاقِ مِنْ قَفِيزٍ وَدِرْهَمِ

لَعَمْرِي لِلدَّعَى الْحَيِّ جَرَّ عَلَيْهِمْ
وَكَانَ طَوًى كَشْحًا عَلَى مُسْتَكْنَفَةٍ
وَقَالَ سَأَقْضِي حَاجَتِي ثُمَّ أَتَقِي
عَدُوِّي بِأَلْفٍ مِنْ وَرَائِي مُلْجِمِ
فَشَدَّ وَلَمْ يُفْزِعْ بَيُوتًا كَثِيرَةً
لَدَى أَسَدٍ شَاكِي السَّلَاحِ مُقَدَّفِ
جَرِي مَنِي بَظْلَمٍ بِعَاقِبِ بَظْلَمِهِ
لَهُ يَدٌ أَظْفَارُهُ لَمْ تُقَلِّمْ
سَرِيعًا وَإِنْ لَا يَدٌ بِالظُّلْمِ بَظْلَمِ
بِمَا لَا يُوَاتِيهِمْ حُصَيْنٌ بْنُ ضَمَضَمِ
فَلَا هُوَ أَبْدَاهَا وَلَمْ يَنْقَدِّمْ

رَعَوْا ظِمَامَهُمْ حَتَّى إِذَا تَمَّ أَرْدَدُوا
فَقَضَوْا مَنَازِبًا بَيْنَهُمْ ثُمَّ أَصْدَرُوا
لَعْمُرِكَ مَا جَرَتْ عَلَيْهِمْ رِمَاحُهُمْ
وَلَا شَارَكَتْ فِي الْمَوْتِ فِي دَمِ نَوَقِلِ
فَكَأَنَّ أَرَاهِمَ أَصْبَحُوا يَعْقِلُونَهُ
لَحِيَّ حِلَالٍ يَصْصُمُ النَّاسُ أَمْرَهُمْ
كِرَامٍ فَلَا ذُو الضُّغْنِ يُدْرِكُ تَبْلَهُ
غَمَارًا تَقْرَى بِالسَّلَاحِ وَبِالدَّمِ
إِلَى كَلَا مُسْتَوْبِلٍ مُتَوَخِّمِ
دَمِ ابْنِ نَهْيِكَ أَوْ قَتِيلِ الدُّنْكَمِ
وَلَا وَهَبِ مِنْهَا وَلَا ابْنِ الْمُخَزَمِ
صَحِيحَاتِ مَالِ طَالَعَاتِ بِمَخْرَمِ
إِذَا طَرَقَتْ أَحَدَى اللَّيَالِي بِمُعْظَمِ
لَدَيْهِمْ وَلَا أَلْجَانِي عَلَيْهِمْ بِمُصْلَمِ

سَمِئْتُ تَكَالِيفَ الْحَيَاةِ وَمَنْ يَعِشْ
تَمَانِينَ حَوْلًا لَا أَبَا لَكَ يَسَامِ

وَأَعْلَمَ مَا فِي الْيَوْمِ وَالْأَمْسِ قَبْلَهُ وَلَكِنِّي عَنْ عِلْمِ مَا فِي غَدٍ عَمِ
 رَأَيْتُ الْمَنَاءَ حَبَطَ عَشْرًا مِمَّنْ تُصَبِّ نَمْنُهُ وَمَنْ تَخْطِيعُ يُعْمَرُ فِيهِمْ
 ٥٠ وَمَنْ لَا بُصَانِعَ فِي أُمُورٍ كَثِيرَةٍ يَضْرَسُ بِأَنْيَابِ رِيْوَطٍ بِمَنْهِمِ
 وَمَنْ يُجْعَلِ الْمَعْرُوفَ مِنْ دُونِ عَرْضِهِ يَفْرُهُ وَمَنْ لَا يَتَّقِ الشَّئْمَ يُشْتَمِ
 وَمَنْ يَكُ ذَا فَضْلٍ فَيَتَخَلَّ بِفَضْلِهِ عَلَى قَوْمِهِ يُسْتَعْنَى عَنْهُ وَيُدْمَمِ
 وَمَنْ يُوفِ لَا يَدْمَمُ وَمَنْ يَهْدِ قَلْبَهُ إِلَى مُطْمَئِنَّ الْبَرِّ لَا يَتَجَمَّعِمِ
 وَمَنْ هَابَ أَسْبَابَ الْمَنَاءِ يَنْلَنَّهُ وَلَوْ يَرْقُ أَسْبَابَ السَّمَاءِ بِسَلَمِ
 ٥٥ وَمَنْ يُجْعَلِ الْمَعْرُوفَ فِي غَيْرِ أَهْلِهِ يَكُنْ حَمْدُهُ ذِمًّا عَلَيْهِ وَيَنْفَدِمِ
 وَمَنْ يَعْصِرِ أَطْرَافَ الرِّجَالِ فَإِنَّهُ يُطِيعُ الْعَوَالِي رُكْبَتُ كُلِّ لَهْدِمِ
 وَمَنْ لَا يَدُدُ عَنْ حَوْضِهِ بِسَلَاحِهِ يَهْدَمُ وَمَنْ لَا يَظْلُمُ النَّاسَ يَظْلَمُ
 وَمَنْ يَغْتَرِبُ يَحْسَبُ عَدُوًّا صَدِيقَهُ وَمَنْ لَا يُكْرِمُ نَفْسَهُ لَا يَكْرِمُ
 وَمَنْ لَمْ يَزَلْ يَسْتَرْحِلُ النَّاسَ نَفْسَهُ وَلَا يُعْفِيهَا يَوْمًا مِنَ الدَّلِّ يَنْدَمِ
 ٦٠ وَمَهْمَا تَكُنْ عِنْدَ امْرِئٍ مِنْ خَلِيقَةٍ وَإِنْ خَالَهَا تَخْفِي عَلَى النَّاسِ تَعْلَمِ
 وَكَأَنَّ تَرَى مِنْ صَامِتٍ لَكَ مُعْجَبٍ زِيَادَتُهُ أَوْ نَقْصُهُ فِي التَّكَلُّمِ
 لِسَانُ الْفَنَى نِصْفٌ وَنِصْفُ فُرَادِهِ فَلَمْ يَبْقَ إِلَّا صُورَةُ اللَّحْمِ وَالْدَّمِ
 وَإِنَّ سَفَاهَ الشَّيْخِ لَا حِلْمَ بَعْدَهُ وَإِنَّ الْفَنَى بَعْدَ السَّفَاهَةِ يَحْلُمِ

سَأَلْنَا فَأَعْطَيْتُمْ وَعَدْنَا وَعَدْتُمْ وَمَنْ أَكْثَرَ التَّسَالِ يَوْمًا سَيُحْرَمِ

ARGUMENT.

In vv. 1—16 the poet, after the fashion of his fellows, strives to touch the hearts of his hearers and to prepare them to receive kindly what he has to say on his real theme by the mention of women and the deserted pasture-grounds which the tribesmen leave at the end of Spring; Umm Aufâ was his wife: she bore him, we learn, many children, who all died young, and one day in an angry mood he divorced her. Afterwards he repented of his deed, and prayed her to return to him, but she would not.

Then he turns to praise the two who made the peace and bore the burden of the price of blood (vv. 16—25). After that he exhorts the two tribes (vv. 26—33) to keep faithfully their pact of peace, and after what they have known of War, to stir her not up again. Then he tells of the deed of Huseyn son of Damdam, how he slew his enemy while the two peoples were making ready the peace (vv. 34—39). Then by a figure he relates how the senseless war broke out afresh, and more blood was spilt; for which again the House of Gheyḍ paid from their herds, though themselves without blame (vv. 40—46).

What follows would seem to be a store of maxims of life and conduct, some of which are wanting in certain recensions of the poem, and all do not appear to be here appropriate; nevertheless many of them seem clearly to touch upon the generous deed of the Peace-makers, and to be meant to praise them and to set them as an example to men. In the last verse he warns those who heard him that though noble men may pay for misdoers once and again, the time will come when the thankless shall find none to bear the burden of his guilt.

I.

- 1 Are they of Umm Aufâ's tents—these black lines that speak no word
in the stony plain of el-Mutathellem and ed-Darrâj?
- 2 Yea, and the place where her camp stood in er-Raqmatân is now
like the tracery drawn afresh by the veins of the inner wrist.
- 3 The wild kine roam there large-eyed, and the deer pass to and fro,
and their younglings rise up to suck from the spots where they lie
all round.
- 4 I stood there and gazed: since I saw it last twenty years had flown,
and much I pondered thereon: hard was it to know again—
- 5 The black stones in order laid in the place where the pot was set,
and the trench like a cistern's root with its sides unbroken still.
- 6 And when I knew it at last for her resting-place, I cried—
'Good greeting to thee, O House—fair peace in the morn to thee!'
- 7 Look forth, O Friend—canst thou see aught of ladies camel-borne
that journey along the upland there above Jurthum well?
- 8 Their litters are hung with precious stuffs, and thin veils thereon
cast loosely, their borders rose, as though they were dyed in blood.
- 9 Sideways they sat as their beasts clomb the ridge of es-Sûbân
—in them were the sweetness and grace of one nourished in wealth
and ease.

- 10 They went on their way at dawn—they started before sunrise :
 straight did they make for the vale of er-Rass as hand for mouth.
 11 Dainty and playful their mood to one who should try its worth,
 and faces fair to an eye skilled to trace out loveliness.
 12 And the tassels of scarlet wool in the spots where they gat them down
 glowed red like to '*ishriq* seeds, fresh-fallen, unbroken, bright.
 13 And when they reached the wells where the deep blue water lies,
 they cast down their staves and set them to pitch the tents for rest.
 14 On their right hand rose el-Qanân and the rugged skirts thereof—
 and in el-Qanân how many are foes and friends of mine !
 15 At eve they left es-Sûbân : then they crossed its ridge again
 borne on the fair-fashioned litters, all new and builded broad.

II.

- 16 I swear by the Holy House which worshippers circle round—
 the men by whose hands it rose, of Jurhum and of Qureysh—
 17 How goodly are ye, our Lords, ye twain who are found by men
 good helpers in every case, be it easy to loose or hard !
 18 Busily wrought they for peace, those two of Gheyð, Murrah's son,
 when the kin had been rent in twain and its friendship sunk in
 blood.
 19 Ye healed 'Abs and Dubyân's breach when the twain were well-nigh
 spent,
 and between them the deadly perfume of Menshim was work-
 ing hate.
 20 Ye said—' If we set our hands to Peace, base it broad and firm
 by the giving of gifts and fair words of friendship, all will be well.'
 21 And ye steadfastly took your stand thereon in the best of steads,
 far away from unbrotherliness and the bitter result of wrong.
 22 Yea, glory ye gained in Ma'add, the highest—God guide you right !
 who gains without blame a treasure of glory, how great is he !
 23 The wounds of the kindred were healed with hundreds of camels good :
 he paid them forth troop by troop who had no part in the crime ;
 24 Kin paid them forth to kin as a debt due from friend to friend,
 and they spilt not between them so much as a cupper's cup full of
 blood.
 25 Among them went forth, your gift, of the best of your fathers' store,
 fair spoils, young camels a many, slit-eared, of goodly breed.

III.

- 26 Ho! carry my message true to the tribesmen together leagued
and Dubyân—Have ye sworn all that ye took upon you to swear?
- 27 It boots not to hide from God aught evil within your breasts:
it will not be hid—what men would hold back from God, He knows.
- 28 It may be its meed comes late: in the Book is the wrong set down
for the Reckoning Day; it may be that vengeance is swift and
stern.
- 29 And War is not aught but what ye know well and have tasted oft:
not of her are the tales ye tell a doubtful or idle thing.
- 30 When ye set her on foot, ye start her with words of little praise;
but the mind for her grows with her growth, till she bursts into
blazing flame.
- 31 She will grind you as grist of the mill that falls on the skin beneath;
year by year shall her womb conceive, and the fruit thereof shall
- 32 Yea, boys shall she bear you, all of ill omen, eviller [be twins:
than Aḥmar of 'Âd: then suckling and weaning shall bring their
- 33 Such harvest of bitter grain shall spring as their lords reap not [gain:
from acres in el-'Irâq of bushels of corn and gold.

IV.

- 34 Yea, verily good is the kin, and unmeet the deed of wrong
Hoṣeyn son of Ḍamḍam wrought against them, a murder foul!
- 35 He hid deep within his heart his bloody intent, nor told
to any his purpose, till the moment to do was come.
- 36 He said—'I will work my will, and then shall there gird me round
and shield me from those I hate a thousand stout cavalry.'
- 37 So he slew: no alarm he raised where the tents stood peacefully,
though there in their midst the Vulture-mother had entered in
- 38 To dwell with a lion fierce, a bulwark for men in fight,
a lion with angry mane upbristled, sharp tooth and claw,
- 39 Fearless: when one him wrongs, he sets him to vengeance straight,
unfaltering: when no wrong lights on him, 'tis he that wrongs.

V.

- 40 They pastured their camels athirst, until when the time was ripe
they drove them to pools all cloven with weapons and plashed with
blood;

- 41 They led through their midst the Dooms : then they drove them forth
again
to the pasture rank and heavy, till their thirst should grow anew.
- 42 But *their* lances—by thy life ! were guilty of none that fell :
Nehik's son died not by them, nor by them el-Muthellem's slain ;
- 43 Nor had they in Naufal's death part or share, nor by their hand
did Wahab lie slain, nor by them fell el-Mukhazzem's son.
- 44 Yet for each of those that died did they pay the price of blood—
good camels unblemished that climb in a row by the upland road
- 45 To where dwells a kin great of heart, whose word is enough to shield
whom they shelter when peril comes in a night of fierce strife and
storm ;
- 46 Yea, noble are they ! the seeker of vengeance gains not from them
the blood of his foe, nor is he that wrongs them left without help.

VI.

- 47 Aweary am I of life's toil and travail : he who like me
has seen pass of years fourscore, well may he be sick of life !
- 48 I know what To-day unfolds, what before it was Yesterday ;
but blind do I stand before the knowledge To-morrow brings.
- 49 I have seen the Dooms trample men as a blind beast at random treads
—whom they smote, he died : whom they missed, he lived on to
strengthless eld.
- 50 Who gathers not friends by help in many a case of need
is torn by the blind beast's teeth, or trodden beneath its foot.
- 51 And he who his honour shields by the doing of kindly deed
grows richer : who shuts not the mouth of reviling, it lights on him.
- 52 And he who is lord of wealth and is niggardly with his hoard
alone is he left by his kin : nought have they for him but blame.
- 53 Who keeps faith, no blame he earns : and that man whose heart is led
to goodness unmixed with guile gains freedom and peace of soul.
- 54 Who trembles before the Dooms, yea, him shall they surely seize,
albeit he set in his dread a ladder to climb the sky.
- 55 Who spends on unworthy men his kindness with lavish hand,
no praise does he earn, but blame, and repentance the end thereof.
- 56 Who will not yield to the spears when their feet turn to him in peace
shall yield to the points thereof, and the long flashing blades of
steel.
- 57 Who holds not his foe away from his cistern with sword and spear,
it is broken and spoiled : who uses not roughness, him shall men
wrong.

true, it would be an important datum for fixing the year in which the peace was made; but it is not consistent with the other facts of the history. The date of the peace is fixed by M. Caussin de Perceval, on grounds of great probability, at from 608 to 610 A. D. (*Essai*, ii. p. 499); it was not till the 8th year of the Hijrah (629—639 A. D.) that 'Abs and Ġubyān embraced el-Islām (*id.* iii, p. 218). According to the *Iqd el-Ferīd* of Ibn 'Abd Rabbih, quoted by M. Fresnel (*Journ. Asiatique*, 3me série, iv. p. 20), the two persons whom Zuheyr praises in his Mo'allaqah are 'Auf and Ma'qil, sons of Subey' son of 'Amr, of the line of Tha'lebeh ibn Sa'd. These two did indeed, according to el-Meydānī, make peace between 'Abs and their own tribe of the Benū Tha'lebeh, who at first refused to join the rest of Ġubyān in the engagement; but it is impossible to regard them as the two praised by Zuheyr if v. 18 is genuine, inasmuch as they were not of the line of Gheyṣ son of Murrah.

The name of the man who was slain by Ḥoseyn son of Ḍamḍam is given by el-Meydānī and the *Iqd* as Tijān. 'Antarah slew Ḍamḍam, Ḥoseyn's father, on the Day of el-Mureyqib, one of the earliest battles of the war (Fresnel, *loc. cit.* p. 6), and Ward son of Hābis slew Herim, Ḥoseyn's brother, on the Day of el-Ya'muriyyeh, immediately after the slaying of the hostages by Ḥoḍeyfeh (Aghānī, xvi. 30). Between these two dates 'Antarah composed his Mo'allaqah, in vv. 73—75 of which he mentions Ḍamḍam as slain by his hand, and the two sons as still alive.

It is worthy of notice that the Mo'allaqah, in vv. 40—46, (if those verses are rightly placed,) seems to tell of a graver dissension as having arisen out of Ḥoseyn's violent deed than that which this tradition relates; for it would appear that the renewal of strife which followed it was the occasion when the slain men named in vv. 42 and 43 (said in the commentary to be all of 'Abs) met their death; and that some bloodshed ensued seems certain from the metaphor in vv. 40—41, where the camels, (that is, the fighting men,) after a *ḡim*, or period of thirst, are said to have been led down again to drink of the pools of Death. The *ḡim* was probably the truce during which peace was being arranged.

* This parenthesis, telling of the end of Qeys son of Zuheyr, is founded on the testimony of Ibn el-Athīr, who is believed generally to follow Abū 'Obeydeh (Kāmil i. p. 434.), and et-Tebrizī (Ḥamāseh, p. 223); it is vouched for by a poem by a man of 'Abs, Bishr son of Ubayy son of Ḥomām, quoted in the Ḥamāseh, where it is said of the horses that ran in the Race of Dāḥis—

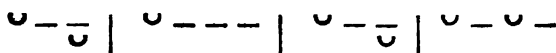
جَبْنَ بِأَدْنِ اللَّهِ مَقْتَلَ مَالِكٍ وَطَرَحْنَ قَيْسًا مِنْ دَرَارِ عَمَانٍ

"They brought to pass—so God willed—the spilling of Mālik's blood,
and cast Qeys away forlorn an exile in far 'Omān."

* This paragraph is mine, and expresses what seems to me the most probable view to take of the case. I should add that besides el-Hārith, Herim, and Khārijeh, another pair of the house of Gheyṣ are mentioned in the *Iqd* (*Journ. Asiat.*, Juillet 1837, p. 18) as having exerted themselves to establish peace between 'Abs and Ġubyān, viz. Ḥarmaleh son of el-Ash'ar and his son Hāshim.

NOTES TO THE MO'ALLAQAH.

The measure of the poem is the noble cadence called the *Tawīl*, most loved of all by the ancient poets. Each hamistich consists of four feet, arranged thus—



(In the second foot the third syllable is occasionally, but rarely, short: the only instances of a short third syllable in the 128 hemistichs of this poem are v. 14, *a* and *b*, v. 28, *b*, and v. 33, *b*; it is observable that it most frequently occurs with proper names.)

In the English an attempt has been made to imitate the metre of the original. The measure adopted is not absolutely unknown in our language; it is to be found in many lines of that wonderful organ-swell, Browning's *Abt Vogler*; the seventh stanza of that poem in particular is almost entirely in the *Tawil*. The following lines are exactly the Arabic cadence—

"Existent behind all laws, that made them and, lo, they are!"

"And, there! Ye have heard and seen: consider and bow the head!"

Other verses of the same stanza exhibit the licences which I have found it necessary to take with the metre to adapt it to the English; these are chiefly the following:—

- (1.) Dropping the first short syllable, as in v. 10, *b*, 11, *a*.

This is a licence which the Arabs themselves allow, but only (except in a few doubtful instances) at the commencement of a poem. It is matched by Browning's—

"Give it to me to use! I mix it with two in my thought."

- (2.) Addition of a short syllable at the beginning of a foot, as in v. 12, *a*; so in Browning—

"And I know not if, save in this, such gift be allowed to man."

- (3.) Exchanging the one long third syllable of the second foot for two short, as in v. 4, *a* and *b*; so Browning—

"But here is the finger of God, a flash of the Will that can."

- (4.) Changing $\text{u} - -$ into $\text{u} \text{u} -$ in the third foot, as in v. 9, *a*, v. 11, *b*; compare Browning's—

"That out of three sounds he frame, not a fourth sound, but a Star."

The text above given and translated is that of Arnold (Leipzig, 1860), with two slight amendments in the vocalization of v. 3 *b* and v. 59 *b*, and the substitution of *law* for *us* in v. 54 *b*; of these the last two are indicated in Arnold's notes, pp. 23 and 24, and the first is adopted from ez-Zauzenf. Arnold's recension agrees in the text and arrangement of the verses with ez-Zauzenf's, except in v. 59, which the latter entirely omits.

. Another recension is to be found in Ahlwardt, *Six Poets*, pp. 94 *seq.*; this is based on the MSS. of Gotha and Paris: it differs from Arnold's chiefly in the arrangement of the verses in the *teshbiib* describing the journey of the ladies, and in the omission of several of the maxims which follow v. 49 and the arrangement of those which it retains. The following is the order of the verses in Ahlwardt's recension as compared with Arnold's, the numbers of the verses being those of the latter and the arrangement that of the former:—

1—8, (9 omitted) 11, 10, 14—15, 12—13, 18, 16—17, 19—22, 25, 23—24, 26—44 *a*, (after which Ahlwardt inserts a second hemistich which is not in Arnold, and commences the next verse with a first hemistich which is also wanting in the latter. Arnold's 44 *b* agrees with Ahlwardt's 44 *b*;) 45—47, 49, 48, 50, 52, 51, 57, 54, 56, 53, 58, 60, 59. vv. 55 and 61—64 are omitted; they will be found in the Appendix, p. 192.

Of the two main differences above mentioned, it must be admitted that the arrangement of the verses describing the journey reads more smoothly and consecutively in Ahlwardt's text than in Arnold's; perhaps this is rather a reason for suspecting the hand of a later adjuster than for rejecting the more difficult order: in such a matter however no critical judgment is worth much. The second difference, the omission of vv. 55 and 61—64 among the sententious utterances which close the poem, seems to be also generally in favour of Ahlwardt; v. 55 might, as he suggests (*Bemerkungen über die Aechtheit &c.*, p. 64), find its proper place after v. 51. Of the last four verses of Arnold I would retain v. 64, which seems a fitting close of the poem, and appropriate to the tradition (of two payments by the Peace-makers) with which it is connected; the other three are clearly out of place where they stand, and belong to another poem (perhaps two others), whether by Zuheyr or some other poet.

Among the minor differences of arrangement, Ahlwardt's text seems to err in placing v. 18 before vv. 16—17; v. 16 appears clearly to be the opening of the real theme, and the change of person in v. 18 (called *iltifât*) is of frequent occurrence in the old poetry and offers no difficulty. Of the transposition of v. 25 there is little to be said one way or the other. The additions in Ahlwardt after v. 44 *a* are evidently to be rejected, the second inserted hemistich being a mere echo of v. 24 *a*.

Of textual differences there are few of much importance; in v. 11 *a*, Ahlwardt reads *li-ḡ-ḡadīḡi* for *li-l-laṡṡi*: in v. 14 *b*, *wa man* for *wa kam*: in v. 15 *b*, *mufa'ami* for *wa muf'ami*: in v. 20 *b*, *mina-l'amri* for *mina-l-gauli*: in v. 22 *a*, *wa gheyrihā* for *hādītumā*: in v. 25 *b*, *ifāli-l-Muzonnemi* for *ifālin muzonnemi* (see note below on this verse): in v. 26 *a*, *faman mublighu* for *alā 'abliḡi*: in v. 27 *a*, *tektumenna* (wrongly) for *tektumunna*, and *nufūsikum* for *ḡudūrikum* (last better): in v. 31 *b*, *tahmil* for *tuntej* (last better): in v. 35 *b*, *yetejemjemi* for *yetaḡaddemi*: in v. 37 *a*, *tefza' buyūtun kethiretun* for *yufzi' buyūtun kethiretan* (last preferable): in v. 40 *a*, *ra'au mā ra'au min ḡim'ihim* *thumma* for *ra'au ḡim'ahum ḡattā iḡā temma*, and *b*, *teslu bir-rimāḡi* for *tefarraḡ bis-silāḡi* (last preferable metrically): in v. 43 *a*, *sharakū ḡi-l-ḡaumi* for *sharaket ḡi-l-mauti*: in v. 45 *b*, *ḡala'at* for *ḡaraḡet* (last preferable, since the former unnecessarily repeats the *ḡali'ātin* of v. 44 *b*): in v. 46 *a*, *ḡu-l-witri yudriku witrahu* for *ḡu-ḡ-ḡighni yudriku teb-lahu*: in v. 54 *a*, *el-meniyyeti yelḡahā* for *el-menāyā yeneinahu*, and *b*, *rāma* for *yorga*: in v. 53 *a*, *yufḡi* for *yuhda*: in v. 60, *b*, *wa lau* for *wa in*: in v. 59, for our reading Ahlwardt has the following—

*wa man lam yezel yestahmilu-n-nḡsa nefsaḡu,
walā yughniḡā ḡauman mina-d-daḡri, yuḡ'ami :*

in v. 63 *b*, (Appendix p. 192,) *yaḡlumu* (right: see note below) for *yaḡlumi*: in v. 64 *b*, *sayoḡramu* for *sayoḡrami* (both are equally right grammatically, but the former would be an *iqwā* if the verse really belongs to this poem).

The verses of the *Mo'allaqah* quoted in the *Aghāni* are the following:—

together on p. 146, Vol. ix, —vv. 1, 3, 4, 6, 56, 54 (in the last verse Ahlwardt's reading, not Arnold's, is given):

on p. 148, v. 18:

on p. 150, vv. 18, 25 (*if'ûli-l-Muzennemi*, in accordance with Abû 'Obeydeh's reading), 24 :

on p. 164, v. 60 (with the story of this verse having been quoted by 'Othmân son of 'Affân).

The translation offered is as literal as I have found it possible to make it consistently with English idiom and the rhythm; where it seemed necessary, I have explained deviations from absolute literalness in the notes: where the change of phrase was slight, I have not thought it needful to notice it. Thus in v. 3, *a, khilfetan* is not "to and fro," but "one after another": in v. 32, "Boys shall she bear you, of ill omen, all of them like Ahmar of 'Âd," is the word-for-word rendering. I have not however consciously anywhere departed from the sense of the original, and but seldom from the phrase. Of other translations, the only ones I have seen are that by M. Caussin de Perceval, at pp. 531—536 of Vol. ii of his *Essai sur l'histoire des Arabes avant l'Islamisme*, and that by Rückert (which omits the *teshbiib*) at pp. 147—150 of the first volume of his translation of the *Hamâseh*; the translation by Sir W. Jones, which I believe to be the only one before published in English, I have not been able to consult.

v. 1. *El-Mutathellim* (according to the *Marâsid*, *el-Mutathellim*) is a hill in the high land stretching East of the northern *Hijâz*, in the country of the *Benû Murrah* of *Ghatafân*; it is mentioned in 'Antarah's *Mo'allaqah*, v. 4, in connection with *el-Hazn* and *es-Şammân*. Of *ed-Darrâj* no particular information is given in the *Marâsid*.

v. 2. "*Er-Raqmatân*": according to *ez-Zauzenî* two places are meant by this name, which is the dual of *er-raqmeh*, a word meaning "the meadow" (*rauḍah*); he says that one village called *er-Raqmeh* is near *el-Başrah*, and another of the same name near *el-Medîneh*: they are thus far distant one from another. *Raqmeh* however means, besides a meadow, the side of a valley, or the place in it where water collects; it seems more probable from the way in which the name is used that one place, not two, is intended; the same name, in the same dual form, occurs in a lament by a woman of *Ghatafân* over the death of *Mâlik* son of *Bedr* given in the *Aghânî* (xvi, p. 30)—

إِذَا سَجَعْتَ بِالرَّقْمَتَيْنِ حَمَامَةً أَوْ الرَّسِّ فَابْكِي فَارِسَ الْكَتَفَانِ

"So long as a turtle moans in the groves of *er-Raqmatân*
or *er-Rass*, so long weep thou for him that rode *el-Ketefân*."

The second hemistich of this verse gives concisely a simile for the water-worn traces of the tents which is found in a more expanded form in *Lebid's Mo'allaqah*, vv. 8 and 9, g. v. The tattooing over the veins of the inner wrist is said to be renewed, because the torrents have scored deeply certain of the trenches dug round the tents, while others that did not lie in the path of the flood have become only faintly marked, like the veins beneath the tracery.

v. 3. "The wild kine," the *antilope defassa*, a species of bovine antelope. "The deer," *arām* (for *ar'ām*), plural of *ri'm*. *Ri'm* is the white antelope (*antilope leucoryx*); though identical in form with the Hebrew *r'ém* (*réym*), it is very doubtful whether the latter word means the same: the LXX translate it by *μονόκερως* (A. V. "unicorn"). The Assyrian is, like the Arabic, *ri'mu*, and there is a good discussion of the meaning of this word in an article on the Animals of the Assyrian Sculptures in the Transactions of the Society of Biblical Archaeology for 1877; it appears certain that it is not the *antilope leucoryx*, but some larger and robuster animal, perhaps the wild buffalo (see Job xxxix, 9-12).

v. 5. "Trench": round the tent a trench is dug to receive the rain from the roof and prevent the water from flooding the interior.

v. 6. "In the morn": the morning was the time when raids were made, and the word *ḡabbāḥ* thus itself is used in the sense of a sudden attack. *Yā ḡabbāḥāḥ* was the battle-cry (*shi'dār*) of Temīm in the Day of el-Kulāb. To wish peace in the morning to a place is therefore an appropriate greeting.

vv. 7—15. The journey here described would take the wanderers along the southern skirt of the tract called by Palgrave (Cent. and East. Arabia, Vol. I, chap. vi) "the Upper Kaseem;" er-Ras is still a place of some importance, and will be found marked on Palgrave's map some distance to the North of 'Oneyzeh. In the days of Zuheyr the country was in the possession of the Benū Asad, who were not always on the friendliest terms with the Benū Dubyān, among whom the poet lived.

v. 12. Tassels of scarlet wool decorated the *hauḍaj* in which ladies rode. "Ish-riq seeds": *ḡabbu-l-fend*; the exact nature of this plant with a scarlet seed or fruit is very doubtful: see Lane, s. v. *فني* and *عشرق*.

v. 16. "The Holy House" is the Ka'beh. The mention of its building by the Qureysh and the men of Jurhum must not be understood of the same time. Jurhum was the name of two Arab stocks: the first the ancient race who peopled the lower Hijāz and Tihāmeḥ at the time of the legendary settlement of Ishmael among them, with whom he is said to have intermarried; the second (whom M. de Perceval regards as alone having had a historical existence) a tribe who ruled in Mekkeh from about 70 B. C. to 200 A. D. They were expelled from Mekkeh and dispersed so that no memorial of them remained by an Azdite stock from el-Yemen called the Khuzā'ah (C. de Perceval, Essai, i, 218. Aghāni, xiii, 108-111.). The second Jurhum are said (Agh. *id.*, p. 109) to have rebuilt the Ka'beh on the foundations laid by Abraham after it had been overthrown by a flood: the architect was one 'Omar el-Jārūd, whose descendants were known as the *Jedarah*, or masons. The Qureysh settled in Mekkeh during its occupation by the Khuzā'ah, and gained possession of the Ka'beh in the time of Quṣayy, whose mother was of the race of the Jedarah, about 440 A. D. (C. de Perceval). Quṣayy, in the year 450 A. D. or thereabout, caused the building erected by the Jurhum to be demolished, and rebuilt the Ka'beh on a grander scale. It was rebuilt a third time in the year 605 A. D., very shortly before the Mo'allagah was composed. Moḥammed, then 35 years old, assisted in the work. These three occasions are probably those to which Zuheyr refers.

"Circle round," *ʿāḍa ḥaulahu*; the *ṭawāf*, or going round seven times, was one of the most ancient rites of the religion of the Arabs; it was the mode of worship used not only for the Ka'beh, but also for the other objects of reverence among the pagan Arabs: see Lane, s. v. *Duodr*.

v. 18. In this verse *mā beyna-l-ʿashireti* must be understood as meaning the friendship of the two houses of the family. *Beyn* ("that which is between") has two contrary significations: disunion, that which parts or separates, and concord, that which joins; so *Ḍātu-l-beyn* means both enmity and friendship.

ʿAshireh here means the stock of Baghlī son of Reyth son of Ghatafān, the common father of ʿAbs and Ḍubyān; according to the dictionaries *ʿashireh* is the smallest sub-division of the tribe, but its use here is clearly opposed to that view. The various words meaning tribe and family are very loosely applied in the old poetry, and the distinctions drawn between them by lexicographers (see Lane s. v. *shaʿb*) do not seem to be borne out by usage. In v. 24 ʿAbs and Ḍubyān are each called *qaum*, and in v. 34 ʿAbs is a *ḥayy*.

v. 19. The literal translation of this verse is—

"Ye two repaired the condition of ʿAbs and Ḍubyān (by peace), after that
they had shared one with another in destruction, and had brayed between them
the perfume of Menshim."

The second hemistich is said to refer to a custom which existed among the Arabs of plunging their hands into a bowl of perfume as they took an oath together to fight for a cause until the last of them was slain. Menshim, the commentators say, was a woman in Mekkeh who sold perfume. Such an oath was followed by war to the bitter end, and so "he brayed the perfume of Menshim" became a proverb for entering on deadly strife. That oaths so taken were counted of special force may be seen from the tale of "the Oath of the Perfumed ones," *ḥilf el-Muṭayyabin*, taken by the sons of ʿAbd-Menāf and their partisans in or about 490 A. D. (see C. de Perceval, *Essai*, i. 254. Ibn-el-Athīr, *Kāmil*, i. pp. 329-30.)

v. 22. Maʿadd was the forefather of all those Arabs (generally called *mustaʿribeh* or insidious) who traced their descent from ʿAdnān, whose son he was. The name is thus used to denote the Central stocks, settled for the most part in Nejd and el-Hijāz, as opposed to the Arabs of el-Yemen or of Yemenic origin by whom they were bordered on the North and South. The name of Maʿadd's son Nizār is also used in the same way. Nizār was the father of Muḍar, Rabiʿah, and Anmār; the last-named and his descendants joined themselves to the people of el-Yemen; and "Rabiʿah and Muḍar" is again a comprehensive term used to designate the tribes of Nejd and the Hijāz.

v. 25. "Slit-eared, of goodly breed": *min ʿifḍlin muzennemi*. There are two ways of taking this phrase: the first is that here adopted, whereby *muzennem* is rendered as an adjective attached to *ʿifḍl*, meaning "slit-eared." Camels of good breed had a slit made in the ear, and the piece of skin thus detached (called *zenemeh*) left to hang down. The ordinary grammatical construction would require the feminine, *muzennemeh*, to agree with *ʿifḍl*; but the masculine is used by a poetic license. The other, resting on the authority of Abū ʿObeydeh, reads *ʿifḍli Muzennemi*, "young camels (the offspring) of Muzennem" (or el-Muzennem): Muzennem, he says, being the name of a famous stallion-camel whose breed was much renowned among the Arabs.

It is worth remarking that this line seems to contradict the assertion of et-Tebrizî, in his commentary on the *Hamâseh*, p. 107, that the young camels (seven or eight months old) called '*ifal*' (plural of '*afil*') were not given in payment of bloodwits. Perhaps there was an exception in the case of the better breeds. The passage, however, on which et-Tebrizî makes this remark does not necessarily bear him out.

v. 26. "Tribesmen together leagued," *el-Ahlâf*, plural of *ahlf*. The commentary says that these confederates were Ghatafân, Asad and Tayyi'; other authorities quoted by Lane (*s. v. ahlf*) restrict the appellation to Asad and Ghatafân, Asad and Tayyi', or Fezârah (a branch of Dûbyân) and Asad. Since Dûbyân, a division of Ghatafân, is named separately from the *Ahlâf*, it would seem probable that the word here means only Asad and Tayyi'. I do not, however, find that these confederates took any part in the War of Dâhis, except at the battle of Shi'b Jebileh, when Asad joined Dûbyân and Temîm against 'Âmir and 'Abs; their presence at the oath-taking between the various branches of Ghatafân would, however, render the engagement more formal and solemn: they were a sort of "Guaranteeing Power."

vv. 27-28. Herr von Kremer (*Culturgeschichte des Orients unter den Chalifen*, Vol. ii., p. 358, note*) regards these verses as interpolated, and alien from the spirit of the poetry of the Ignorance. He says, moreover, that they are inconsistent with v. 48, which expresses the true feeling of that age, that of the Future no man knows anything. Certainly their spirit is more religious than is usual in the old poetry, and the mention of the Book and the Reckoning Day points to a body of doctrine which we are accustomed to think was first planted among the Arabs by Mohammed. But it is to be remarked that the passage where the verses come (vv. 26-33) seems thoroughly consecutive and complete in sense: that the same number of verses is given, in the same order, in all the recensions of the poem; and that v. 28 exhibits a very curious construction, easily intelligible indeed, but unlikely to be used in an interpolation: this is the carrying on of the *mejzûm* imperfect from the apodosis of the conditional sentence in v. 27 *b* into the unconditional proposition of v. 28.

As regards the possibility of such an exhortation being addressed to the tribes settled in the country East of Yethrib and South of the mountains of Tayyi' in 610 A. D., I do not think that it should be hastily rejected. Few subjects are more obscure than the real nature of the religion of the pagan Arabs. It would seem that at the time when the Prophet arose there was extremely little religious faith in the people of any sort: that their old divinities were held by them in much the same estimation as that in which our own forefathers in Norway and Iceland held Odin and Thor when Christianity first overspread the North. But beyond the reverence, such as it was, paid to

* His words are—"Das Gedicht, Zohair XVI, wird man wegen v. 27 (28), der von der Abrechnung am jüngsten Tage spricht, für unecht oder interpolirt erklären müssen. Ich entscheide mich für das Letztere, denn v. 49 (48) spricht die echte, alte Idee aus, dass man von dem Zukünftigen nichts wisse." In the same note, H. von Kremer sees traces of Mohammedan recension in the name 'Abd-allâh in a poem of 'Antarah's. I presume that he considers the occurrence of that name as belonging to the father of Mohammed, the son of Jud'an, and the brother of Dureyd son of eṣ-Ṣimneh, as well as to the tribe-fathers 'Abd-allâh ibn el-Azd (Ma'ârif, p. 64), 'Abd-allâh ibn Ghatafân (*id.* p. 39), and 'Abd-allâh ibn Ka'b and 'Abd-allâh ibn Kilâb, sub-divisions of 'Âmir ibn Ṣa'sa'ah (*id.* pp. 42 and 43), to be insufficiently vouched for.



1.



2.



3.



4.



5.

ARIANS (DARDS) OF THE UPPER INDUS.

1. and 2. People of Dárchik Village. 3. A woman from Dáh. 4. A man from the Rűshen, or husbandman caste from Dáh. 5. A man from the Rűxmat or artisan caste from Dáh
(The caps worn are all black.)

R. B. Shaw del.

J. Schaumburg Lith.

el-Lât, el-'Ozzâ, Menât, Fuls, Wedd, and the rest, there was certainly a back-ground of faith in *The God, Allah*, whose name was, as it still is, in the mouth of every Bedawi as his most frequent ejaculation. Without assuming such a faith as already well known to the people, a great portion of the Qur'ân would be impossible: that revelation is addressed to men who join other gods with God, not those who deny Him. Some tribes may have had more of this belief in the One God, and been accustomed to look more immediately to Him, others (especially those who, like the Qureysh, possessed famous shrines of idolatrous worship which brought them in much profit,) less: probably contact with Judaism and Christianity determined in some measure the greater or less degree of it. Now among the neighbours of the tribes of Ghatafân were the Jews settled from Yethrib to Kheybar and Teymâ; to the North was Kelb in the Daumat (or Dûmat) el-Jendel, almost entirely Christian; Christianity had made some progress in Tayyî', nearer still; and we have seen how, according to a fairly vouched for story, Qeys son of Zuheyr, the chief of 'Abs, spent the last years of his life as a Christian anchorite in 'Omân. To the West was Yethrib, in constant relations with the Kings of Ghassân, who were Christian, together with their people; and to the North-east was el-Hîreh, whose King, en-No'mân Abû Qâbûs, had long been a Christian, and where Christianity had spread among the people long before his day. En-Nâbighah of Dubyân, Zuheyr's famous contemporary, had dwelt long at the Courts both of el-Hîreh and Ghassân; and in a well-known passage* (much contested, it is true, but in favour of the genuineness of which much may be said,) he refers to a Rabbinical legend of Solomon's power over the Jinn, and how they built for him Tedmur. At the fair of 'Okâq Quss son of Sâ'idah had preached Christianity long before Zuheyr made this poem. And to 'Abs itself belonged one of the *Hanîfs*, Khâlid son of Sinân son of Gheyth (see Ibn Quteybeh, Ma'ârif, p. 30). These things seem to me to make it not impossible that the lines may be genuine. The objection that they are inconsistent with v. 48 appears wholly groundless; the latter refers to the vicissitudes of this world and the chances of life: the former to the reckoning of God in the world after death. (See note on v. 32 for a further argument in favour of the authenticity of these verses.)

v. 29. War, *el-Ḥarḥ*, is feminine in Arabic; as in vv. 31 and 32 it is personified as a woman, it seemed best to use in the translation the feminine pronoun in vv. 29 and 30.

v. 31. "Skin," *thifdî*, is the mat of skin that is placed beneath the mill to receive the flour. The comparison of War to a mill and the slain to ground grain is common in the old poetry; so says 'Amr son of Kulthûm (Mo'all. vv. 30, 31)—

مَتَى تَنْقَلِ إِلَى قَوْمٍ رَحَانَا يَكُونُوا فِي اللَّقَاءِ لَهَا طَحِينَا
يَكُونُ نِفَالُهَا شَرْقِيَّ نَجْدٍ وَلِهَوْتُهَا قُضَاعَةٌ أَجْعِينَا

* En-Nâbighah, v. 22 *sqq.* For a discussion of this passage, see Noeldeke, Beiträge z. Kenntn. der Poes. d. alt. Araber, p. XI, and Ahlwardt, Bemerkungen über die Aechtheit d. alt. Arab. Gedichte, pp. 17-18 and 41. Noeldeke appears to overlook the tradition (unless he rejects it) that en-No'mân was a Christian.

"When our War-mill is set against a people
as grain they fall thereunder ground to powder;
Eastward in Nejd is set the skin beneath it,
and the grain cast therein is all Qudâ'ah."

"Year by year shall her womb conceive": *telqah kishdfan*; *kishdf* is said of a she-camel that conceives in two following years. Another word used in a like sense of War is *'awdn*, which is applied to an animal with a hard hoof (as a cow or mare), that after bringing forth her first-born (*bikr*) conceives again forthwith and bears another young one; so *harbun 'awdn* is said of a war the fury of which is perpetually renewed (see *Hamâsh*, p. 180). Again, *hâ'il*, plural *hiydl*, is used of a war which lies long dormant; its meaning is a she-camel that does not conceive for two years, or some years, and it is therefore the opposite of *kishdf*. El-Ĥārith son of 'Obâd said of the War of Basûs after the slaying of his son Bujeyr by Muhelhil—

لَقَحَتْ حَرْبٌ وَّائِلٌ عَنْ حِيَالِ

"The War of Wâ'il has conceived at last, having long been barren."

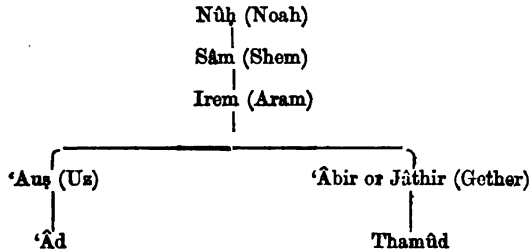
v. 32. "Aḥmar of 'Ād." According to the received story of the Muslims, it was to Thamûd, not to 'Ād, that the prophet Ṣāliḥ was sent to warn them of their wickedness. The sign that he gave them was a gigantic she-camel that issued forth at his bidding from a rock (Qur'ān vii. 71): "Then said those among them that were filled with pride—'Verily we reject that in which ye believed.' And they slew the she-camel and rebelled against their Lord, and said—'O Ṣāliḥ! bring upon us that wherewith thou didst threaten us, if thou art indeed of the Sent of God!' Then the earthquake seized them, and they lay on their faces in their dwellings, dead." (Qur. l. c. vv. 74—76. The story is also told in *Sûrah* xi, vv. 64—71.) The leader in the slaying of the Camel was Qudâr el-Aḥmar, "Qudâr the Red"; and thus "More unlucky than Aḥmar of Thamûd," and "More unlucky than the Slayer of the She-camel," became proverbs. The people of Thamûd (—who are mentioned* by Diodorus Siculus and Ptolemy, and as late as 450 A. D. in the *Notitia dignitatum utriusque imperii*: see C. de Perceval, *Essai* i., p. 27—) dwelt in Ḥijr, a valley on the road Northwards from the Ḥijâz into Syria. The race of 'Ād, on the contrary, were settled in the South of Arabia, in the *Aḥqâf*, now a vast desert of sand: Ibn Quteybeh (Ma'ârif, p. 15) places them "in ed-Daww, and ed-Dahnâ, and 'Ālij, and Yebrîn, and Webbâr, from 'Omân to Ḥaḍramaut and el-Yemen." To them was sent Hûd (Qur. vii. 63 and xi). They were thus separated by the whole distance of Arabia from Thamûd, and, it is probable, also by a vast space of time, if the *Thamudeni* of the *Notitia dignitatum* are the same as the latter people. The commentators give two reasons to explain why Zuheyr said, "Aḥmar of 'Ād" instead of "Aḥmar of Thamûd": the first is the necessity of the rhythm, which would not permit him to say Thamûd; the second is that some of the genealogists say that Thamûd was a cousin of 'Ād, and after the destruction of the

* In Mr. George Smith's "Assyria" ("Ancient History from the Monuments" Series), p. 100, Sargon, in 715 B. C., is related to have led an expedition into Arabia, "where he conquered the Thamudites and several other tribes, carrying them captive and placing them in the cities of Samaria."

ancient race of 'Âd the people of Thamûd inherited their possessions and were called 'Ad el-Akkireh, "the later 'Âd." The first reason must be rejected, for it would have been easy to the poet so to frame the verse that Thamûd might have been used instead of 'Âd: for instance, he might have said—

Fatuntej lakum ghilmâna, kullun ka'annahu
Quddru Thamûdin : thumma turdî fatefîmî.

Moreover other poets also speak of Aḥmar of 'Âd: e. g., Abû Jundab el-Huḏālî, quoted by et-Tebrizî in the Ḥamāseh, p. 421. The second is more probable, though the Biblical genealogies framed for 'Âd and Thamûd by later Muslim writers can hardly have been known to Zuheyr. According to these, the following was the descent of these two tribes—



A third hypothesis is possible—that some version of the legend of Ṣalîḥ and his Camel, and the judgment which followed its slaying, was current in the days of Zuheyr which dropped out of mind when el-Islâm overspread the land.

If this verse is genuine, it would seem strongly to support the opinion that vv. 27—28 may also be genuine; for it refers plainly to a legend (mentioned in the Qur'ân in a way which shows that it was well known to those addressed) of God's judgment on the wicked. That it is genuine and not a Muslim interpolation appears highly probable from the mention of 'Âd rather than Thamûd: the latter would have been named by a Muslim following the version of the legend embodied in the Qur'ân.

v. 33. "Of bushels of corn and gold," *min qafîzin wa dirhemi*: the coinage called *dirhem* was silver, not gold; but the latter is here used (like the word *dirhem* in the original) in the general sense of money. The *qafîz* was a measure of capacity containing eight *mekkûks* or twelve *ḡâ's* of el-'Irâq: one *ḡâ'* of Baghdâd is $5\frac{1}{2}$ *riḡls*, or pints: the *qafîz* is thus 64 pints. The word is originally Persian, *kawîzh* (کویز).

v. 37. "Though there in their midst the Vulture-mother had entered in," *ladâ ḥeyṭhu 'alqet raḥlahâ 'Ummu qash'ami*: literally, "In that place where the Vulture-mother cast down her camel-saddle." "To cast down one's saddle" (as "to lay down one's staff" in v. 13) means to halt in a place. "The Vulture-mother" is a name of Death, or Calamity; *qash'am* means an old vulture, and is used in that sense in the last verse of 'Antarah's Mo'allaqah.

v. 38. "A bulwark for men in fight," *muqattaf*: literally, "one whom men cast before them (in battle)," to shield themselves or to do a desperate deed.

v. 40. As explained at the end of the second note to the Introduction, this verse appears to refer to the breaking out again of strife which followed the deed of Ḥoṣeyn. "They pastured their camels athirst," *ra'au ḡim'ahum*: literally, "They pastured (their camels) for their *ḡim'*, or period between two drinkings." Camels in Arabia are not taken down to drink every day; in the greatest heat they are watered every alternate day: this is called *ghibb*; as the weather gets colder, they pass two days without water, and come down on the fourth: this is called *rib'*; then follow *khims*, *sids*, and so on to *'ishr*, when the *ḡim'* is eight days, and they are watered on the tenth. The camels are the warriors, and the pools the pools of Death. The image seems intended to figure the senselessness of the strife, and its want of object and aim.

v. 41. "Till their thirst should grow anew": these words have been added in the translation to complete the sense; they follow from the description of the pasture (*kela'*) as unwholesome, heavy (*mustaubal*), and indigestible (*mutawakhhkam*): such, that is, as to stir their thirst again in a short time. The unwholesome pasture is the brooding over wrong in the intervals of combat. In like manner Qeys son of Zuheyr says, of the bitter results of wrong in this same War of Dāḥis (Ḥamāseh, p. 210. Aghānī xvi., 32)—

وَلَكِنَّ الْفَتَى حَمَلَ بَنَ بَدْرٍ بَغَى وَالْبَغَى مَرْتَعَهُ وَخِيمُ

"But the stout warrior Ḥamal son of Bedr
wrought wrong: and wrong is a surfoiting pasturage."

v. 44. The commentary on this verse seems to me to err in taking *kullan* as equivalent to *kulla wāḥidin minā-l-ʿaqlin*; it is, I think, equivalent to *kulla wāḥidin minā-l-qatlā*: this follows from the *hu* in *ya'qilūnahu* at the end of the hemistich. I have translated accordingly.

v. 45. This verse contains a difficult word which the dictionaries do not satisfactorily explain, *viz.* *ḥilāl* in *liḥayyin ḥilālin*. In form it is the plural of *ḥāll*, "alighting or abiding in one place"; but it seems always to be used, as here, as an epithet of praise. Lane (*s. v. ḥāll*) says that it means "a numerous tribe alighting or abiding in one place." I have not found it in the Ḥamāseh, though *ḥayyun ḥolūlun* (another plural of *ḥāll*) occurs in a poem on p. 171; but it is used in a poem by 'Amr son of Kulthūm given in the Aghānī, vol. ix., p. 183—

أَلَا أَبْلَغُ بَنِي جُشَمَ بَنِ بَكْرِ وَتَغْلِبَ كُلَّمَا أَتَيْتَا حِلَالًا
بِأَنَّ الْمَاجِدِ الْقَرَمَ بَنَ عَمْرٍو غَدَاةً نَطَاعَ قَدْ صَدَقَ الْقِتَالَا

Which seems to mean—

"Ho! carry my message to the sons of Jusham son of Beker,
and Teghlib, (that they may know) as often as they come to the great tribe,
How that the glorious warrior, the son of 'Amr,
on the morn of Naṭā' bore himself stoutly in battle."

* For the vocalization of Naṭā' here given see the *Marāṣid*, *s. v.* It is a village of el-Yemāseh belonging to the Benū Ḥanīfeh.

It may possibly mean *numerous*, and hence *strong*, this sense being derived from that of a body of men halting together in a compact host, on the alert and prepared for all attacks.

v. 46. This verse is in praise of 'Abs, and is in continuation of v. 45. The second hemistich offers some difficulty: one does not expect to find their protection of "him that wrongs them" set down to their credit; but the words *el-jāni 'aleyhim* cannot be otherwise rendered. Probably the wronger spoken of is the man who by slaying a member of another tribe involves his own in difficulties. It sometimes happened that such an one found himself unsupported by his kinsmen, and turned out from among them as a *khalī*, or outcast: for instance, el-Ĥārith son of ʔālim, who slew Khālid son of Ja'far of 'Āmir while the latter was under the protection of en-No'mān son of el-Munḍir, King of el-Ĥireh, was so treated by his tribe of Murrah, the same as that to which the men whom Zuheyr praises in this poem belonged. Such a desertion, unless for the gravest possible cause, was held to be disgraceful; and 'Abs are accordingly praised because they would not give up the wrongdoer, though he brought evil upon them.

v. 47. Zuheyr was eighty years old when he composed his Mo'allaqah; if this was in 608 or 610 A. D., as M. de Perceval supposes, he may well have been a hundred, as the Aghānī relates (ix. 148), when he was seen by Moḥammed, who said—"O God! grant me a refuge from his Devil!"—that is, his cunning in song; it is added that he made no more poems from that day till his death, which ensued shortly after. This would be about 628 or 630 A. D.; and we know that his son Ka'b gave in his adhesion to the Prophet in 631 (the latter part of the ninth year of the Hijrah), after Zuheyr's other surviving son Bujeyr, together with the greater part of his tribe, the Muzeyneh, had already embraced el-Islām.

v. 49. "Blind beast," *'ashwā*: literally, "a weak-eyed she-camel"—one that sees not well where she is going, and therefore strikes everything with her forefeet, not paying attention to the places where she sets down her feet (Lane). The word is used proverbially: you say—*Rekiba fulānuni-l-'ashwā*, "Such an one rides the weak-eyed she-camel"; that is, he prosecutes his affair without due deliberation; and—*Khabāṭa khabāṭa-l-'ashwā*, "He trod with the careless tread of a weak-eyed she-camel," he acted at random.

v. 50. If this verse is rightly placed next after v. 49, the rending by the teeth and the treading under foot should refer to the weak-eyed she-camel spoken of in that verse; and so I have taken it, the camel being blind Chance.

v. 53. I am far from satisfied with the translation given of this verse, in which, however, I have scrupulously followed the commentary. The doubtful words are *muṭma'innu-l-birri* and *yetejemjem*; the former is explained as meaning *birrun khāliṣun*, that is, "pure goodness"; and the latter as the same as *yetaradded*, that is, "he is disturbed, confounded, perplexed." But Lane renders *muṭma'innu-l-birri* as "quiet, at rest, in heart or mind" (*s. v. birr*, end); for *tejemjema*, he gives—"he spoke indistinctly, he concealed a thing in his bosom, he held back from the thing, not daring to

do it"; the sense of "being disturbed in mind" does not occur, though it may, perhaps, fairly be gathered from the last of those given by Lane. I should be inclined to render *man yuhda qalbuhu*, &c.—"He whose heart is guided to quietness and rest of soul is not disturbed in his doings, but acts without fear or trouble of spirit."

v. 56. Among the Arabs, when two parties of men met, if they meant peace, they turned towards each other the iron feet (*siḍḍi*, plural of *sujj*) of their spears: if they meant war, they turned towards each other the points.

v. 57. The "cistern", *ḥawḍ*, is a man's home and family.

v. 60. This verse, the commentary tells us, was quoted by 'Othmān son of 'Affān, the third Khalīfah.

v. 62. This accords with the proverb—*innama-l-mar'u bi'aḡḡhareyhi*—"A man is accounted of according to his two smallest things"—his heart and his tongue.

vv. 60-62 seem consecutive in sense, and probably belong to the same poem; but it is very difficult to see how they cohere with the rest of this. v. 63, on the other hand, seems separate not only from the rest of the poem, but also from the three verses that precede it; grammar would require that the verb at the end of it should be *marfū'*, not *mejsūm*—*yaḡlumu*, not *yaḡlum*: but to read it so would disturb the rhyme, and be a fault of the kind called *iqṭāḍ*. The commentary says that the *mim* of *yaḡlum* is originally *mauqāf* (quiescent in a pause), and is read with *kesr*, because that is the appropriate vowel for making a quiescent letter moveable; but this reason is very lame. On the whole, it seems certain that v. 63 does not properly belong to the piece, and it is probable that vv. 60-62 are also intrusions. No other poem of those by Zuheyr that remain has the same metre and rhyme as his Mo'allaqah, and it is most likely that fragments of other poems, now lost, in this measure and rhyme that have survived have been included in it, because there was no other piece into which they could be put. The rest of the maxims forming the conclusion of the poem can be understood as arising, some more, some less closely, out of its subject; but the different order in which they occur in different recensions, and the fact that some recensions omit some of them which others supply, make it doubtful whether even they all properly belong to the Mo'allaqah.

Stray Arians in Tibet.—By R. B. SHAW, Political Agent.

(With one plate.)

The line which divides the Musalmān from the Buddhist populations of Asia, where it crosses the valley of the Upper Indus, passes through the villages of a small tribe which is worthy of some attention. It is Arian in blood though surrounded on all sides but one by Turanians of the Tibetan branch. The people of this tribe are proved by their language and their customs, which are supported by their traditions of former migrations, to

belong to the Dàrd* race, although they themselves are not aware of the kinship. They are known simply as *Bròk-pà* (or highlanders). While isolated among strangers they have preserved themselves with a caste-like feeling from amalgamating with them, and seem to have only recently and very superficially accepted the religious beliefs of their neighbours. The greater part of the tribe is thus nominally Buddhist, while two or three of their north-westernmost villages bordering on Baltistán have become Musalmàn.

This tribe presents therefore, to the student of early institutions, the interesting sight of a people of pure Arian race, isolated in the semi-barbarous stage, and who enjoy the rare distinction of being practically unaffected by the action of any of the great philosophising or methodising religions; although in some of their customs they have not altogether escaped being influenced by contact with neighbours of another race.

I paid a visit to the Dàh-Hanu district (the home of these so-called Buddhist Dàrds) on my way down to India from Ladàk (Western Tibet) last winter (1876). In a wild gorge through which the narrow Indus rushes, and where the grand masses of granite seemingly piled in confusion on both banks scarce leave room for the passage of the river and conceal the higher mountains behind them, my first camp was pitched. Close by, the Hanu Ravine, which in its upper part expands into a wide inhabited valley, escapes through a rocky chasm into the Indus. Here, on a little triangular plain a few yards in extent between the cliffs and the river, the only flat spot around, the people of Hanu were waiting to receive me. The sun was setting; the gorge was already in deep shade; a line of women in dark attire was drawn up along the side of the pathway, each holding in her hand a saucer full of burning juniper-wood from which columns of smoke ascended in the still air, uniting overhead in a kind of canopy and giving out a pungent incense-like odour. A wild music of drums and screaming pipes was playing. As I approached, the women bent down and placed on the ground at their feet the smoking bowls which screened them as in a cloud, while they greeted me in the peculiar manner of their tribe by waving the two hands rapidly in front of their faces with fingers closed as if holding something.

My attention was chiefly attracted by some witch-like old hags of the number, with faces begrimed by juniper smoke, whose sharp haggard features and deep sunk eyes were in marked contrast with the flat Tibetan countenances to which one is accustomed in Ladàk. These were unmis-

* Although Dr. Leitner (in his Dardistán) states that the name Dard was not claimed by any of the race that he met, yet I have heard the Drás people of that tribe apply it to their parent stock in Astor under the form *Dardé*. They are also known to their Kashmíri neighbours by the name of *Dard*, and *Dardú*.

takeably of a different race. They wore long straight woollen smocks, square flat caps poised on their heads with one of the corners projecting over the forehead, the hair done up into numberless slender plaits hanging loose and straight, and sheep skins suspended like cloaks over the shoulders, the only part of their dress resembling that of Tibetan women, excepting the mocassin-like boots. The men were clothed just like Tibetans* with caps, like black nosebags, falling over one ear.

These people were inhabitants of the Hanu side-valley, whose villages lie some distance up it, but who had come down to the gorge of the main river (Indus) to receive me. They have lost their own tribal dialect and speak Tibetan; but otherwise in dress and customs they resemble the rest of their people.

My next day's march led through similar scenery, the path now rising up the side of the cliff supported on frail-looking scaffoldings of tree-trunks resting on projecting rocks or on wooden trestles, now plunging precipitously down to the river-side where a stone could be thrown to strike the opposite cliff across the Indus. We saw a village or two on the other side at the mouths of lateral valleys, inhabited not by Bròkpàs but by Musalmàn Tibetans from beyond the mountain-range on the west. At length we came to a succession of isolated villages on our own (north-east) side of the river, mostly placed on high alluvial plateaux near the mouths of side ravines (whence they obtain their water for irrigation), and divided by vertical cliffs into terraces rising in successive steps. Here the warmth in summer is great, the rays of the sun being thrown off from the granite sides of the confined valley, so that where water is available the vegetation is luxuriant. Vines trail from the overhanging cliffs and from the splendid walnut trees, and two crops ripen each year on the same ground during the summer season, nothing being grown in winter. The apricots, mulberries, and apples of the district are celebrated. Between the villages there is nothing but the most arid wastes of granite without a green thing to cheer the eye. In this part the villages that occur in the other side of the river are inhabited by Bròkpàs as well as those on this.

Dàh is the principal village in this part. Situated on a long sloping alluvial terrace about a hundred yards wide and at the highest part perhaps a couple of hundred feet above the river, it is separated from a still higher terrace by a wall of cliff which culminates in a point immediately above the village. On this point a cairn surmounted by thin staves with fluttering rags attached, marks the supposed abode of a local demon or deity. The howling waste behind, invisible from the village on account of its higher level, but rising into still higher mountain masses which tower above, affords a fitting scene for all the supernatural doings of the

* Women are everywhere the most conservative of national customs.

mountain spirits. The scenery which inspires awe in a passing traveller, has made its mark on the minds of the inhabitants. These lofty solitudes are, from their earliest years, connected with ideas of dread, which shape themselves into myths. The priest affirms that sometimes in the early dawn while performing the annual worship, he perceives a white indistinct shape hovering over the cairn; and this, he says, is the goddess of the spot revealing herself to her worshipper. The people believe that this demon keeps a special watch over all their actions, and in a country where frequent accidents by flood or fell are almost inevitable, and where a false step or a falling rock may cause death at any time, they put down such disasters to the vengeance of the goddess for the neglect of some of their peculiar customs which they have persuaded themselves are religious duties.

Foremost among their tenets is the abhorrence of the cow. This is an essentially Dàrd peculiarity, though not universal among them. Unlike Hindus they consider that animal's touch contamination, and though they are obliged to use bullocks in ploughing, they scarcely handle them at all. Calves they seem to hold aloof from still more. They use a forked stick to put them to, or remove them from, the mother. They will not drink cow's milk (or touch any of its products in any form); and it is only recently that they have overcome their repugnance to using shoes made of the skin of the animal they so condemn. When asked whether their abstaining from drinking the milk and eating the flesh of cows is due to reverence such as that of the Hindus, they say that their feeling is quite the reverse. The cow is looked upon as bad not good, and if one of them drank its milk, they would not admit him into their houses.

Again in reply to a question, they ascribed this custom to the will of their goddess. They found by experience that she would not allow them to drink the milk of cows with impunity. The son of a certain head-man of the village of Ganok, a Musalmàn Bròkpà, had broken through the prohibition after living some years among the Baltis. After a time the goddess caused him to go mad and to throw himself into the river where he was drowned.

Thus although the Bròkpàs of Dàh-Hanu are nominally Buddhists, yet their real worship is that of local spirits or demons like the *Lhà-mo* (goddess) of Dàh.*

* In this, however, they are not singular; for the Tibetans of Ladàk also have a reverence for similar spirits of purely local influence called *Lhà* (cf. *Lhà-sa* "the city of gods"), a reverence which seems to be neither founded on the Buddhist dogmas, nor much countenanced by the more respectable members of the Lāmaité hierarchy. An annual incarnation of one of these demons (a female) takes place at Shè, a village of Ladàk, in the month of August; but though Lāmas are so plentiful in the country, it is to one of the lay members of a certain family that the honour of giving a temporary body to the deity belongs, while Lāmas are rarely to be seen in the crowds that witness

Her name is *Shiring-mo*.^{*} A certain family in the village supplies the hereditary officiating priest. This person has to purify himself for the annual ceremony by washings and fastings for the space of seven days, during which he sits apart, not even members of his own family being allowed to approach him, although they are compelled during the same period to abstain from onions, salt, chang (a sort of beer), and other unholy food. At the end of this period he goes up alone on to the rocky point before mentioned above the village, and after worshipping in the name of the community the deity who dwells there in a small cairn,[†] he renews the branches of the "shukpa" (*Juniperus excolsa*)[‡] which were placed there the previous year, the old branches being carefully stowed away under a rock and covered up with stones.

It is said that this deity or spirit accompanied the ancestor of the priestly family from the original home of the Bròkpàs in Gilgit. Formerly the priest used to be occasionally possessed by the demon and in this state to dance a devil-dance, giving forth inspired oracles at the same time, but these manifestations have ceased for the last twelve or fifteen years. The worship is now simply one of propitiation inspired by fear, the demon seeming to be regarded as an impersonation of the forces of nature adverse to man in this wild mountainous country. Sacrifices of goats (not sheep) are occasionally offered at all seasons below the rock, by the priest only, on behalf of pious donors. They talk of the existence of the demon as a misfortune attaching to their tribe, and do not regard her with any loyalty as a protecting or tutelary deity. In each house the fireplace consists of three upright stones of which the one at the back of the hearth is the largest, 18 inches or 2 feet in height. On this stone they place an offering for the *Lhamo* from every dish cooked there, before they eat of it. They also place there the first-fruits of the harvest. Such is their household worship.

Besides this spirit-worship, which is their tribal religion, they have a superficial coating of Buddhism. They say that three or four cycles, that is

the performance and consult the oracle. Perhaps this may be the remains of a form of local spirit worship which may have preceded Buddhism in these countries. I have already treated this subject elsewhere.

* The affix *mo* is the Tibetan feminine affix, as *bo* is the masculine.

† The *Sidh-pòsh Káfrs* (probably Dards) have also a custom of "going once a year to the top of a mountain as a religious exercise and putting a stone on a cairn" (Leitner's Dardistan, Vol. I, Part 3, p. 42).

‡ This is also a Tibetan custom with this difference, that each Tibetan householder has a similar sacred bundle of *shukpa* branches and horns of animals on the flat roof of his own house. But these customs are mere survivals (superstitions) among the Tibetans, while they form the religion of the Bròkpàs.

forty or fifty years ago, after a war between Shigar and Ladāk, when their country was occupied by the Ladāk army, the Lāmas converted them. The head Lāma at the monastery of Skirbuchan, further up the river, told me, however, that it was only some twelve or fifteen years ago that the Bròkpàs were converted by Lāmas from his monastery who went on begging tours amongst them. But this may have been a mere revival. At any rate, there is a remarkable absence in the Dāh-Hanu country, of those Buddhist monuments (long stone dikes covered with inscriptions, and tall structures surmounted by obelisks and containing relics, called respectively *Mané* and *Chorten*) which form such a conspicuous feature along the roads and in the villages of Tibet. I saw one or two small *chortens*, evidently newly erected, and in two villages small *gompàs* or hermit-cells (the larger monasteries of Tibet have the same name) inhabited each by a single Lāma, one of whom was a Tibetan and the other, whom they brought forward rather as a curiosity, a real *Bròkpà* Lāma, the only one in existence. These *gompàs* also were quite new.

The Bròkpàs burn their dead like the Ladākis; that is to say in little brick furnaces on the hill-sides. The upper part of the furnace is a short upright cylinder into which the body is crammed in a squatting posture with the head tied well down between the knees, while a fire is lighted in the square base of the furnace. This method is probably adopted as saving fuel in a country where it is so scarce, and where it would be difficult to get logs sufficient for the ordinary mode of Hindu cremation where the body is extended at full length on an open pyre. The corpee is carried to the burning on a kind of sedan-chair raised by poles on men's shoulders. It is placed in the squatting posture in which it is to be burnt, but covered up with flowing coloured sheets so that it might almost be taken for a veiled woman being carried on a journey. Often in Ladāk a broad-brimmed Lāma's hat is placed on its head to secure a blessing for the soul of the defunct.

Mr. Drew, who has given a most interesting short account of these Bròkpàs in his "Jummoo and Kashmir," is, I think, mistaken in supposing that they have no caste, as the other Dāds have. I have heard of at least three caste-like divisions, which we may call those of *priests*, *cultivators*, and *artisans*. The priestly families (called *Lhābdak*, Tib.) form the highest division in each village. Although men of the next caste are allowed to come into their houses, yet it is only on condition of washing their hands and faces before doing so, especially if they have recently been among the Gentiles (Tibetans, &c.), a precaution that does not seem to be considered necessary on other occasions by the Bròkpàs, who are a very dirty people. This next caste which forms the bulk of the people is called *Rūshen*. The younger branches of the priestly families become *Rūshens*, since there can only be one priest or Lhābdak in each village.

Besides these there is a lower caste consisting, in the village of Dàh, of only five families. They were originally blacksmiths, it is said, but no longer carry on the ancestral calling. They are called *Rüzmet* (Tib.) or *Gärgyut*.^{*} Their women are not allowed to approach the cooking-hearths of the higher caste, nor are the *Rüzmet* men, excepting after a purification similar to that of the *Rüşen* on going into the houses of the priests. The higher castes will not eat what is cooked by them.

Reversing the custom of the Hindus in the matter of marriage, the lower caste may take wives from the higher, but not *vice-versâ* (except in the case of the priests who, I gather, can marry *Rüşen* women). Probably as a consequence of this, a married daughter is never allowed to re-enter the house of her parents and may not touch anything belonging to them. After three generations of marriages with the higher caste, the progeny are admitted into it. While at Dàh, I was questioning a party of Bròkpàs, and one of them, an old man who, though sitting rather apart, had been very forward in answering my questions, became silent and hung down his head when I began inquiries into the caste-system. It appeared that he was a *Rüzmet* or low-caste-man. But presently he brightened up and said: "True, I am now a *Rüzmet*, but in three generations I can become *Rüşen*." This thought seemed to console the old man, much to the amusement of the others.

Polyandry is the rule in Dàh-Hanu. As the Bròkpàs do not intermarry with the neighbouring Tibetans, it would seem that the question of its possible cause or effect in a disproportion of the sexes could be well studied in this confined area. I had not leisure or opportunity to obtain exact statistics, but if there were any notable excess of either sex in such small communities, where there is no monasticism to speak of, it could hardly escape notice by the more intelligent among them. I repeatedly put the question: "Why do several brothers take only one wife between them?" The answer given me was: "Because the land is not sufficient to provide food for the families of the several brothers, if they each took a wife." Again I asked: "If an equal number of boys and girls are born in your village, as you say; and each family of two or three (or more) brothers takes only one girl to wife between them, where are the other girls? Do they

* These castes seem roughly to answer to three out of the four castes prevalent among the main body of the Dàrds: viz., 1st, *Shin*; 2nd, *Yashkun* (these two castes trade, cultivate land, or keep sheep); 3rd, *Kramin* (? derived from *Krum*=work) (are weavers, carpenters, blacksmiths, artisans in fact); 4th, *Dóm* (are musicians and do low drudgery; this caste seems absent from the Dàh-Hanu division of Dàrds). [See Leitner's Dardistân, Vol. I, Part 3, p. 48, 2nd note, and Drew's Jummoo and Kashmir, p. 426.]

marry into the villages of the neighbouring Tibetans?" They answer, No. "Are there many unmarried women in your villages?" They reply that, on the contrary, they often find it difficult to procure wives. It would seem therefore that there must either be a great defect in the number of births of females, or an equal excess in their deaths while young. I could not hear of female infanticide and do not believe that it is practised, as, if it were, it must be known to the Kashmir officials.

It is not only in marriage that they keep themselves apart from their neighbours. They will not eat with the Tibetan Buddhists or Musalmāns or other outsiders, nor will they allow these to come near their cooking places. The caste prejudice seems to originate on the side of the Brōkpā, for their neighbours often eat in their houses, only separate dishes are given them which are afterwards purified with burning juniper. No Brōkpā will eat in the house or from the dishes of a Tibetan; nor will he eat fish or birds or (of course) cow's flesh. Formerly, if they had been among the Tibetans, they would purify themselves with the smoke of the "shukpa" before entering their own houses again.

The tribe is subdivided into several groups of villages. 1st. Those in the Hanu side valley (whose inhabitants have exchanged their own language for Tibetan, being situated on the main road between Skardo and Ladāk.) 2nd. The Dāh group, consisting of Baldēs, Phindur, Byéma, Sani, Dundir, and Dāh villages. 3rd. The Garkhon group, consisting of Garkhon, Dārchik (large village on west of Indus), Sanācha (ditto), Urdās, Gragra (up side-stream on east), and Watsara. These are all the Buddhist villages. The people of each group consider themselves to be one community. The Dāh people reckon from seven ancestors who first colonised their villages and of whom they give the names: *viz.*, *Lalūsho* (from whom the Lhābdaks or priests spring); *Zoné*, *Dākré*, *Gochaghé* (these three are the ancestors of the *Rūshen* caste); *Düsé*, *Gabüré*, and *Tukshüré* (these are the fathers of the *Rüzmet* caste). The land of Dāh is still divided according to these families, though some of it has changed hands. In this fact we may perhaps see a trace of the early Arian joint family holding, passing into the stage of individual proprietorship. Each man knows his own ancestry (real or imaginary), and each field is known as belonging to the patrimony of one of the seven fathers of the tribe, though it may now be in the hands of a descendant of one of the others. The remaining groups of villages have similar traditions. The Dāh people say that their ancestors, when they first came, lived by hunting, not by agriculture. One of their mighty hunters dropped his bow (called in their language *Dāh*) on the hill-side. It became a water channel which fertilized the fields of what afterwards became a village. One of their Chiefs found certain seeds growing wild which he sowed near the water-course. These seeds proved to be those of wheat

and barley. Thus the village was founded. The story of the bow is probably originated either by the curved course of the water-channel which comes out of a side valley and bends round the hill side to reach the village ; or else by a mere superficial resemblance of sound between the name Dàh (of which the origin had become forgotten) and the name for a bow.

Several of the villages possess a communal dwelling in which every inhabitant of the village has a place. That of Dàh is very curious. It covers a considerable space in the angle between the Indus and a side-stream, protected on two sides by the precipitous declivities of the high alluvial plateau on which it stands and on the third by a wall. It was thus fortified against the raids of the neighbouring Baltis. The interior consists of an intricate maze of passages, some open and some covered in, which may be considered either as the lanes of a tightly packed village, or rather as the passages of a vast single storied house which forms the common dwelling of the whole community, each household having its separate apartment or den. Here the people always live during winter, for warmth or for company. They all, however, have other houses for summer, out in the fields. I could not discover that there was any difference in tenure between the lands adjoining the common dwelling and the outlying fields. The village of *Dàrchik* likewise is cut off from the lower course of the valley by a vertical cliff, the escarpment of the plateau on which it stands. There are only two ways of approach. One high up and away from the river, is guarded by a fortified communal dwelling. The other, near the river, consists of a rugged narrow staircase constructed in the face of the cliff and closed by a gateway at the top. Such precautions were necessary in former days when the men of Baltistán made raids on their neighbours, especially on such as were not Musalmàns, and penetrated even to Ladàk. Now all is peace under the common rule of our Feudatory, the Mahàrájá of Kasbmír.

So much for the (so-called) Buddhist *Bròkphàs*. But the villages of the same tribe which lie exposed to Musalmàn influences down the Indus on the two roads leading north-west and south-west respectively, have all been converted to Islám. Of the settlements on the former road, that down the Indus, and in side-valleys near it, the village of Ganok is entirely inhabited by Musalmàn *Bròkphàs*, while those of Dangel, Marul, Chùlichan, and Singkarmòn, are inhabited partly by Musalmàn (Shi'ah) *Bròkphàs*, and partly by Baltis (Tibetan Musalmàns) of the same sect. Below this the population is entirely Balti. On the other road, that across a low Pass south-westward to Kargil, the villages of Tirmo and Lálung are also inhabited partly by Musalmàn *Bròkphàs* and partly by Musalmàn Tibetans from the adjoining district of Purik. These Musalmàn *Bròkphàs* on both roads speak the Dàh dialect, and dress like the Dàh people, and keep apart from the Tibetan Musalmàns both in matter of marriage and in eating.

But they have no caste inequalities amongst them like their non-Musalman kinsmen, and generally they do not object to drinking milk, though at Tairmo, there seems to be a relic of the *Bròkpa* prejudice against the cow in the fact that their women do not touch that animal.

A short account of the language of these Upper Indus Dàrds (or Dàh-Hanu *Bròkpa*s, as they are usually called), including both the Buddhist and the Musalmàn sections, is given hereafter.

It is a question how these Arian Dàrds (for Arians and Dàrds they undoubtedly are) reached their present abode. Both above and below them in the valley of the Upper Indus and to the east of them in the parallel valley of the Shayok, the inhabitants are all of Tibetan race. Dàrdistàn proper, or the country of the Dàrds* (the ancient *Bolor*), is situated far away on the lower course of the Upper Indus, and along that river no vestige of their passage exists and no connecting link with their former home.† But from the country of the Dàrds the Indus makes a wide bend westwards and southwards, and from the concavity of this bend we find a line of Dàrd communities running south at first and then trending off to the east until it almost abuts against the settlements of the Dàh-Hanu *Bròkpa*s on the Upper Indus. These Dàrds are Musalmàn, as are also the main body of the Dàrd race in their own home. The Buddhist *Bròkpa*s of Dàh-Hanu acknowledge no kinship with these people, although they say that their ancestors also came from *Gilid* (Gilgit) and *Brushal*, that is, from Dàrdistàn proper. There is, however, an unmistakable mutual affinity of language and customs. Mr. Drew,‡ in explanation of the difference of religion, very justly supposes the Dàh-Hanu *Bròkpa*s to "belong to an earlier immigration.....separated from the main mass of their tribe brethren at a time before the Dàrds were converted to Muhammedanism."§ The Dàh-Hanu people, having Buddhists on one side of them, would the more easily receive an outward varnish of that faith, while the later Dàrd settlements to the west of them, surrounded by, and intermingled with, Musalmàn, would

* See Mr. Drew's excellent Race Map in his "Jummoo and Kashmir." To illustrate the present paper the whole of the lightly shaded region to the south, west and north of Gilgit up to the Mustagh mountains, should be painted of the same colour as Gilgit, for it is all the home of the Dàrds, though Mr. Drew's plan only permitted him to colour what lies within the Mahàrájé of Kashmir's territories.

† The isolated settlements of Dàrds in certain villages of Baltistàn, are apparently of more recent origin and moreover do not bridge the chasm.

‡ Drew's "Jummoo and Kashmir", p. 430.

§ If we are to believe the *Tārīkh-i-Rashidī*, this had not taken place at the time of its author, Mírzá Haidar's invasion of Dardistàn, in the first half of the 16th century; and, according to Mr. Drew, "Jummoo and Kashmir", page 429, does not seem to have been very completely effected so lately as 30 years ago.

accept Islâm, even if they did not bring it with them from their home. A non-descript paganism (which was probably the religion of the early Dârd)s does not easily resist the encroachments of one of the great dogmatic religions when thrown into unprotected contact with it.

Did the Dâh-Hanu *Bròk-pàs* come by the same route as their later brethren, or did they come, as some of them say, up the valleys of the Indus and Shayok? In the latter case, it would be very strange if a migration of Dârd)s, with the whole upper course of the Indus before them, should have stopped and located themselves precisely at that point on its course where a subsequent migration of their kindred, starting from the same point but coming by a different route (latterly at right angles to theirs), happens, some centuries after, to have struck the Indus. It seems more probable that the line of the later migration marks that of the earlier one; and that the ancestors of Dâh-Hanu people took the route viâ Astor, Déosai, the Dràs river, and Kargil, (a route facilitated by the nature of the country in that direction). Crossing by a low Pass into the Indus Valley, they were there arrested by the more difficult mountains on the east of that river. They probably found this district uninhabited; for though the valley of the Indus, both below and above was, and is, occupied by Tibetan States (Baltistân or Little Tibet, and Ladâk); yet so difficult is the gorge of the Upper Indus in this intermediate portion, that all traffic from Skardo (Baltistân) directed towards Ladâk, is diverted round by the parallel Shayok Valley, only crossing back into that of the Indus by the Hanu Pass, beyond Dâh.

Both the Dâh-Hanu people and the Dârd communities (above mentioned) settled on or about the Dràs river, are called by their Tibetan neighbours *Bròk-pà* (often pronounced *Dòk-pà* with a disregard to the spelling peculiar to Tibetans and Englishmen). *Bròk* means a "mountain pasture" or "alp". The reference may be to the pastures to which they in summer take their sheep (as do also their Tibetan neighbours however) or to the fact of their having settled on grounds which were formerly pastures. But the term *Bròk-pà*, or Highlander, seems more likely to have been applied (as Mr. Drew suggests) to a tribe seen to arrive across the high mountains and descending into the Indus Valley, than to a people coming up that valley from its lower portion, and who have not, since their arrival, taken to a life in the high mountains in any greater degree than their neighbours.

A few words of notice are required for the Dràs Dârd)s of the later immigration just mentioned. Their connection with their parent stock is very close, and betokens a comparatively recent separation. They say that their ancestors came from Darèl; and their settlements extend far up the course of the streams leading down from the uninhabitable plateau of Déosai, which alone separates them from Dârdistân proper.

The furthest settlements of these people at the *embouchure* of the Dràs river into the Indus, approach very closely to, without mixing with, those of their unrecognised kinsmen of the Dàh-Hanu Division. I have collected a few of their grammatical rules and have made a very short comparative table of some of the most ordinary words in the two dialects, by which it will be seen that they are really only different forms of the same mode of speech. These later Dàrds, as far as Dràs, are intermingled with Musalmàn Tibetans or Baltis. At Dràs the former are Sunnis in religion while the latter are Shi'ahs, but lower down near the Indus both are Shi'ahs. The Dàrds of the Dràs district keep themselves quite separate, both as regards marriage and eating, from the Baltis with whom they are intermingled in the same villages, and show also some slight traces of that abhorrence of the cow which is so marked among the Dàh-Hanu people, and which is also prevalent in greater or less intensity among many of the other Dàrds in their own home. To carry the linguistic inquiry a little further back, a comparison with Dr. Leitner's account of the *Astori* form of the Dàrd language will show that the speech of the Dràs *Bròkpa's* is almost identical with that of the people of Astor or Hazora who are one of the chief branches of the Dàrd race in Dàrdistàn, only divided by the river Indus from Gilgit. We have therefore a continuous chain of communities leading from Dàrdistàn proper to the settlements on the Upper Indus at Dàh-Hanu. The small gap that does exist in point of language and dress between these latter and the most advanced (geographically) of their brethren, would seem to indicate a lapse of time occurring between two successive migrations. The foremost may be in all probability considered the earlier, and in either case they profess the religion of their environment.

Thus we have here the furthest extension in this particular direction, of an Indo-Arian migration, a kind of side-eddy from the great stream. As when one of our Indian rivers is filled by the melting snows, if a sudden increase of the flood comes down, one may see the waters, dammed up as it were by the too slowly moving masses in front, trickle off to one side in the endeavour to find a speedier exit. But soon, the temporary increase abating or the circumstances of the ground proving unfavourable, this side channel ceases to flow onward and stagnates to a pool, leaving the traces of its abortive course as far back as the point of divergence. So it would seem that long after the successive floods of Indo-Arians had poured over the long water-parting of the Hindu-Kush, the latest or the most easterly wave (the Dàrd one) expanding in its turn after a vast lapse of time, but finding the southward way blocked in front of it by the earlier comers, sent off side-currents to the south-eastward. These were but puny streams, wanting moreover sufficient *vis à tergo* to carry them onwards when they found themselves amid a foreign element and progressing towards a higher

and more barren country, instead of reaching the fertile plains to which a southerly course had formerly led their brethren, the Hindus. Here therefore they remained, wedged in among alien populations, but connected with their starting point by the living trail of their passage.

Note.—With reference to the question whether any and what degree of connection exists between the Dàrds and the Ghalchahs of the Upper Oxus (see my paper on the latter in the Asiatic Society Bengal, Journal 1876),—it is curious to see that Mr. Drew from native (Dàrd) information classifies one of the Ghalchah tribes, the Wākhi (called by him *Wākhik* or *Gòijāl*) amongst the Dàrds. See Drew's *Jummoo and Kashmir*, p. 457. The termination *k* of the word *Wākhik* is probably a mere Dàrd affix, (cf. *dostek*, *grestok* for *dost*, *grest*).

Dr. Leitner also (*Dardistán*, Vol. I, Part II, p. 24) says that *Gòjāl* is the name given by the Chilásis to the people between Hunza and Pamer on the Yarkand road. Now these people are the *Sariqolí* Ghalchahs. He adds "there are also *Gojāls* under a Rájá of *Gojāl* on the Badakhshán road." These can be no other than the *Wākhi* Ghalchahs, called by Mr. Drew also *Gòijāl*, and the idea suggests itself that perhaps *Gojāl* may be the Dardu form of the name *Ghalcha* given to the same tribes by their Turki neighbours. It is formed by a mere inversion of the position of the latter two consonants, viz., *l*, and *j* or *ch*: كچال for چكچال or چكچال (as *Nucklow* for *Lucknow*). At any rate we see that there is an affinity asserted by the Dàrds between themselves and the Ghalchahs, those neighbours who seem to be, one the most primitive race of the Indian family and the other the most primitive of the Iranians. This assertion of affinity is, to some extent borne out by a comparison of the dialects (see *Journal of Asiatic Society of Bengal*, for 1876, Paper on the Ghalchah languages).

Some Grammatical forms of the Dàrd dialects spoken by the Bròk-pàs of
(i) *Dàh-Hanu and of (ii) Dràs.*

SOUNDS.

There is no broad *ā*, like *aw* in *pawn*, as in some neighbouring dialects and languages.

The accented *ā* to be pronounced as in *father*; unaccented *a* as in *ordinary*, *oriental*.

The accented *é* as *ey* in *they*, but more *staccato*. Unaccented *e* when final is neutral in sound as in the English word *the* when rapidly pronounced before a consonant; this sound approaches that of unaccented *a*. When not final, it is pronounced as in *then* or *yes*.

Besides the long and short *ò, o* and *ù, u*, there is a double-dotted *ö*, pronounced as in German *schön*, and a double-dotted *ü* as in German *mühe* or French *tu*.

With regard to the consonants; the *dh* represents the English soft *th* of *the, this, &c.*, and not the Hindi aspirated *d'h* (which will be represented with an apostrophe, as *d'h, t'h*). Similarly *gh* is *ğ* (ghain) and not the aspirated Hindi consonant.

Tch is the compound used by Mr. Drew, in a short list of Dàh-Hanu words given in his "Jummoo and Kashmir," to represent a *ch* pronounced with the tongue curled back to the roof of the mouth. It stands, as he remarks, to the English *ch* in the same relation that the Hindi palatal *ç* does to the dental *t*, [or that the Wàkhi *sch* does to the English *sh* (see my paper on the Ghalehah Languages in the Journal Asiatic Society of Bengal, for 1876); or that *ř* (see below) does to *r*].

The *ñ* (with a mark over it) is the French nasal *n* which is felt rather as affecting the previous vowel than as a distinct sound. When followed by a vowel however, it acquires something of the sound of *ng* in the word *young*, but never to the extent of allowing any distinct *g* to be heard as in English *younger, hunger*. Thus *moñ* "I" is pronounced exactly like the French *mon* "my." Again *hàñs* "I am" and *byuñs* "I go" would be spelt in French *hanse, biounsse*. But *hàña* (where *ñ* is followed by a vowel) is sounded (as regards the medial consonant) somewhat like the English word *hanger* (not as in *anger*).

The *ř* (with a dot over it) represents the palatal *r* of Hindi, pronounced with the tongue turned back. It approaches the sound of a *d*.

The *r* (with a dot under it) represents a sound intermediate between an *r* and a French *j* or the *z* in "*azure*;" that is, the *r* is not clearly trilled but slurred over; while the tongue is almost in the position for an *r* a stream of air is passed, without vibration of the tip, between it and the palate. Thus in the word *potřo* "grandson", the sound is intermediate between *potro* and *potjo* (as in English we may sometimes hear people pronounce the word "trill" almost like "*chill*").

The *z* (with a dot underneath) represents the French *j* or the *z* in *azure*. It approaches the last letter in sound.

The *y* is only used as a consonant, as in English "yes," "sawyer", &c., (not as in "by," or "every").

I. *Dàh-Hanu Dialect.*

THE SUBSTANTIVE.

Singular.	Plural.
N. <i>ēi</i> a ewe	<i>ēia</i> ewes
<i>ēi-sa</i> (before Trans. verbs not in Past Tense)	<i>ēia-sa</i> (before Trans. Verbs &c.)
G. <i>ēia</i> of a ewe	<i>ēian</i> of ewes
D. <i>ēiara</i> to a ewe	<i>ēian-da</i> to ewes
Acc. <i>ēi-za</i> a ewe	<i>ēian-za</i> ewes
Abl. <i>ēi-zano</i> from a ewe	<i>ēian-zano</i> from ewes
<i>ēia-sūma</i> with a ewe	<i>ēian-sūma</i> with ewes
Instr. <i>ēi-ya</i> by a ewe	<i>ēian-ya</i> by ewes
N. <i>à</i> a she goat	<i>oyo</i> she goats
<i>à-sa</i> (before Trans. Verbs not in Past Tense)	<i>oyo-sa</i> (before Trans. Verbs &c.)
G. <i>oya</i> or <i>às</i> of a she goat	<i>oyon</i> of she goats
D. <i>à-ra</i> to a she goat	<i>oyon-da</i> to she goats
Acc. <i>à-za</i> a she goat	<i>oyon-za</i> she goats
Abl. <i>à-zano</i> from a she goat	<i>oyon-zano</i> from she goats
Instr. <i>à-yé</i> by a she goat	<i>oyo-yé</i> by she goats
N. <i>gôt</i> a house	<i>gôti</i> houses
<i>gôt-sa</i> (before Trans. Verbs not in Past T.)	<i>gôti-sa</i> (before Trans. Verbs &c.)
G. <i>gôtas</i> of a house	<i>gôtin</i> of houses
D. <i>gôtàra</i> to a house	<i>gôtin-da</i> to houses
Acc. <i>gôtà-dze</i> a house	<i>gotin-dze</i> houses
Abl. <i>gôtà-yono</i> from a house	<i>gotin-dono</i> from houses
<i>gôtas-sūma</i> with a house	
Instr. <i>gôt-ya</i> by a house	<i>gotin-ya</i> by houses

And so with *gô* "a cow," Gen. *gôs*, and the other cases *gô*; *gôlô* "a bull," Gen. *gôlos*, other cases *gôlô*; *biü* "a boy," Gen. *biüs*, other cases *biü*. But Genitive of *tchigà* "a woman" is *tchügoya* while the Dat. is *tchügé-ra*, the Acc. *tchigà-zé*, the Abl. *tchügé-yono* and the Instr. *tchigà-ya*. The post-position *sūma* "with", governs the Genitive.

The Plural is irregular though generally ending with a vowel for the nominative and by the same vowel followed by *n* (and by the appropriate post-positions, if any) for the oblique cases.

Thus the plural of *biü* "a boy" is *bé* in the nom. and *bén* in the oblique cases; *göt* "a house", in the plural is *goti* and *gotin*; "cattle" (plural) is *gölé* and *gölen*; "women" is *tshügoyu*, obl. *tshügoyun*. *Boda* "fathers", obl. *bodan*; *apshi* "horses", obl. *apshan*.

ADJECTIVES do not seem to change for the gender.

PRONOUNS.

Singular.

Plural.

1st Person.

N. <i>moñ</i> (with intrans. verbs)	} I	<i>bà</i> or <i>beng</i>	} we
<i>mi-sa</i> (with transitive verbs		<i>bà-sa</i> with transitive	
or in the Present and		or verbs in the Pre-	
<i>ma-sa</i> Future)		<i>beng-sa</i> sent and Future	
		Tenses	
G. <i>mi</i> or <i>miü</i>	my	<i>assü</i>	our
D. <i>mà-ra</i>	to me	<i>assü-ra</i>	to us
Acc. <i>moñ-ze</i> (with Present	} me	<i>assü-za</i>	us
and Future Tenses)			
Abl. <i>mon-yono</i> or <i>mon-deo</i>	from me	<i>assü-yono</i> or <i>assü-deo</i>	from us
Instr. <i>mi-ya</i> (with Past	} by me	<i>bà-ya</i> or <i>beng-ya</i>	by us
Tense of Trans. verbs.)			

2nd Person.

N. <i>tü</i> (with intransitive V.)	} thou	<i>tsi</i>	} ye
<i>ti-sa</i> or <i>tü-sa</i> (with transitive		<i>tsi-sa</i> or <i>tsü-sa</i> (with	
Verbs in Present and Fut.)		trans. V. in Pres. and	
G. <i>tiü</i>	they	Fut.	
D. <i>tià-ra</i>	to thee	<i>tsi</i>	your
Acc. <i>tu-ze</i> (with Present	} thee	<i>tsü-ra</i>	to you
and Future Tenses)		<i>tsü-ze</i>	you
Abl. <i>tü-yono</i>	from thee	<i>tsü-yono</i>	from you
Instr. <i>ti-ya</i> (with Past	} by thee	<i>tsi-ya</i>	by you
Tense of transitive V.)			

3rd Person.

N. <i>so</i> (fem. <i>sa</i>) or <i>p'ho</i>	} he (here or	<i>té</i> or <i>p'hé</i> (with intr.	} they (here
(with intve. V.)		V.)	
<i>so-sa</i> (with trans. V.)		<i>té-sa</i> (with tr. V.)	
Pres. and Fut.	there)		or there)
G. <i>tes</i> or <i>p'hos</i>	of him (do.)	<i>ten</i> or <i>p'héün</i>	of them
D. <i>té-ra</i>	to him	<i>ten-da</i> or <i>p'héün-da</i>	to them
Acc. <i>té-za</i> (with Pres.	} him	<i>tén-za</i> or <i>p'héün-za</i>	them
Tenses)			
Abl. <i>té-yono</i>	from him	<i>tén-</i> or <i>p'héün-yono</i>	from them
Instr. <i>so-ya</i> (with Past	} by him	<i>té-</i> or <i>p'hé-ya</i>	by them
Tense of Trans. V.)			

THE VERB.

The Intransitive Verb "to go".

Byàsti = (in order) to go.*Byà-su* = about to go.*Byuñto* = in going, or, whilst going.*Gyéto* = gone or having gone. *Bo* — go (Impèrative).

INDICATIVE MOOD.

Present Future Tense.

Singular.		Plural.
1. <i>moñ</i> or <i>mi</i>	$\left\{ \begin{array}{l} \textit{byuñs} \dots \text{I go (masc.)} \\ \text{or will go} \\ \textit{bínis} \dots \text{I go (fem.)} \end{array} \right.$	<i>bà byenis</i> we go or will go
2. <i>tü</i>	$\left\{ \begin{array}{l} \textit{byuñä} \dots \text{thou goest} \\ \textit{bínä} \dots \text{do. (fem.)} \end{array} \right.$	<i>tsi byeni</i> ye go, &c.
3.	$\left\{ \begin{array}{l} \textit{so byälla} \dots \text{he goes} \\ \textit{sa bini} \dots \text{she goes} \end{array} \right.$	<i>té byän</i> they go, &c.

Aorist.

1. <i>moñ byü</i>	I go	<i>ba byuñ</i>	we go
2. <i>tü byuñ</i>	thou goest	<i>tsi byeni</i>	ye go
3. <i>so byuñ</i>	he goes	<i>té byeni</i>	they go

Past Tense.

1. <i>moñ</i>	$\left\{ \begin{array}{l} \textit{gös} \dots \text{I went (m.)} \\ \textit{gyis} \dots \text{ditto (fem.)} \end{array} \right.$	<i>bà gyéüñs</i>	we went
2. <i>tü</i>	$\left\{ \begin{array}{l} \textit{go} \dots \text{thou wentest (m.)} \\ \textit{gyéüa} \dots \text{ditto (fem.)} \end{array} \right.$	<i>tsi gyé</i> or <i>gyéüi</i>	ye went
3.	$\left\{ \begin{array}{l} \textit{so go} \dots \text{he went} \\ \textit{sa gyani} \dots \text{she went} \end{array} \right.$	<i>té gyéani</i> or <i>gyéün</i>	they went

Perfect Tense.

1. <i>mi gyéüs</i> (? <i>gyé-hüs</i>)*	I have (or had) gone	<i>bà gyéüñs</i> (? <i>gyé-hüñs</i>)	we have gone
2. <i>tü gyé-àstu</i>	thou hast gone	<i>tsé gyé-àstin</i>	ye have gone
3. <i>so gyé-àstu</i>	he has gone	<i>té gyé-àstin</i>	they have gone

Future Tense.

moñ byuko..... I will go (the other persons of this tense are the same).

* See Past Tense of Auxiliary Verb "to be".

THE DEFECTIVE AUXILIARY "to be".

Present.

Past.

1. <i>moñ</i> or <i>mi hāñs</i> I am	<i>moñ hūs</i> I was
2. <i>tū</i> or <i>ti hāña</i> thou art	<i>tū hūa</i> (near) or <i>àstu</i> (far) thou wast
3. <i>so hāñ</i> he is	<i>so hūa</i> or <i>àstu</i> he was
1. <i>bà</i> or <i>beng hānis</i> we are	<i>bà hūñs</i> we were
2. <i>tsi hāni</i> ye are	<i>tsi hūi</i> or <i>àstin</i> ye were
3. <i>té hāni</i> they are	<i>té hūn</i> or <i>àstin</i> they were

The TRANSITIVE Verb has some peculiarities about its subjects. In the first place, all Tenses except the Past take the second nominative form of Pronouns, *mà-sa*, *ti-sa*, &c., and they add the particle *sa* to substantives in the nominative. Secondly, the *Past Tense* puts the subject in the Instrumentative case, and the object in the nominative, the verbal inflection agreeing with the latter (not in gender, however, but in person), so as almost to assume a Passive form. But as there is a separate Passive, this Tense may be most nearly compared with the Hindustani Transitive Past *e. g.*, *us-ne ek aurat màri* (Hind.) "he struck a woman"; where the verb is in the feminine to agree with the object "woman". So in the Bròkpà dialect: *Tashis-ya moñ kutudhōs* "Tashi struck me", lit. "by Tashi I was struck", where "*kutudhōs*" is the Past verb-form agreeing with the 1st person singular. The 1st persons singular and plural (when occurring as objects of the action) have each a particular form of the verb assigned to them, while the remaining persons have a common form.

With this explanation we will proceed to the

CONJUGATION OF A TRANSITIVE VERB.

Kutisti = (in order) to strike, (on account of) striking.

Kuti-su = about to strike.

Kutyuñto = in striking, or whilst striking.

Kutedho = having struck.

IMPERATIVE.

Kuti = strike.

INDICATIVE MOOD.

PRESENT FUTURE TENSE.

Singular.		Plural.
1. <i>mà-sa</i>	<i>kutyuñs</i> I strike (masc.) or will strike	<i>bà-sa kutyenis</i> we strike, &c.
	<i>kutinis</i> ditto (fem.)	
2. <i>tū-sa</i>	<i>kutyuñā</i> thou strikest (m.) &c.	<i>tsū-sa kutyeni</i> ye strike, &c.
	<i>kutinia</i> ditto (f.)	
3. {	<i>so-sa kutyàlla</i> he strikes &c.	<i>té-sa kutyàn</i> they strike, &c.
	<i>sà-sa kutini</i> she strikes &c.	

AORIST.

1. <i>mà-sa kutyü</i> I strike	<i>bà-sa kutyüñ</i> we strike
2. <i>tä-sa kutyüñ</i> thou strikest	<i>tsi-sa kutyeni</i> ye strike
3. <i>so-sa kutyüñ</i> he strikes	<i>té-sa kutyeni</i> they strike

PAST TENSE.

Instr.	Object.	Verb.	English.
S. 1. <i>mi-ya</i>	moñ	{ <i>kutudhös</i> (masc.) <i>kutedhís</i> (fem.) <i>kutedheñs</i>	{ I was struck we were struck by me by thee by him
2. <i>ti-ya</i>			
3. <i>so-ya</i>			
Pl. 1. <i>beng-ya</i>	(the rest) <i>kutet</i>	{ thou, he, ye or they —wast, was or were struck	{ by us by you by them
2. <i>tsi-ya</i>			
3. <i>teñ-ya</i>			

PERFECT TENSE.

Singular.	Plural.
1. <i>mà-sa kutyüs</i> ... I have (or had) struck	<i>bà-sa kutyüñs</i> we have struck
2. <i>tü-sa kuté-àstu</i> thou hast struck	<i>tsi-sa kuté-àstin</i> ... ye have struck
3. <i>so-sa kuté-àstu</i> ... he has struck	<i>té-sa kuté-àstin</i> ... they have struck

FUTURE TENSE.

1. *mà-sa kutiko* I will strike (the other persons do not vary from this).

Future Preterit Tense.

1. <i>mà-sa kuti-su hüs</i> ... I was about to strike	<i>bà-sa kuti-su hüñs</i> ... we were about to strike
2. <i>tü-sa kuti-su hūa</i> ... thou &c.	<i>tsi-sa kuti-su hūi</i> ... ye &c.
3. <i>so-sa kuti-su hūa</i> ... he &c.	<i>té-sa kuti-su hūn</i> ... they &c.

CONDITIONAL MOOD.

1. *mà-sa kutetto* if I strike (the other persons and tenses do not vary from this form).

PASSIVE.

1. <i>mi kutellas</i> ... I am or have been struck	<i>beng kutellañs</i> we are or have been struck
2. <i>tü kutella</i> ... thou &c.	<i>tsi kutellan</i> ye &c.
3. <i>so kutella</i> ... he &c.	<i>té kutellan</i> they &c.

When there is a Dative case with a Transitive Past tense, the verb may agree with it in person as it would with the direct object :

E. g. *Tü-ya tiü apsh mära dötös* = thou gavest thy horse to me.
Where the verb agrees with the person of the person in the Dative.
In short when there is both a direct object and a dative, one of which is the 1st person (Singular or Plural), the verb agrees with that person by preference, as

E. g. *So-ya moñ gobà-ra dötös* = He gave me to the head-man.
and *so-ya mà-ra apsh ek dötös* = He gave a horse to me.

Where the 1st person (whether direct *object* as in the first example, or *dative* as in the second) governs the verb.

But *mi-ya miü apsh tisà-ra det* = I gave my horse to thee.

BROKPA VERSION OF THE 1ST STORY IN FORBES' PERSIAN GRAMMAR.

Aflatun-ra ek müsh-ya shunät : *Tü kishti-à-rü hatuk sar batö*,

Plato-to a man-by it-was-asked: thou ship-to many years eatest,
tsò-a-rü na-çito yé çit?
sea-to (wonderful) what was seen?

Aflatun-ya razit : *tsò-a harang mi-ya nà-çito çit*

Plato by it-was-said: of the sea this me-by wonderful was seen
moñ tràlobo pà-r nüpädös.

I safely side-to arrived.

ANALYSIS: Of the verbs, *shunät* is the Past Tense Transitive answering to the typical *kutet*, with its subject *müsh-ya* in the Instrumentative case. *Batö* is 2nd Person Sing. of the Past tense of an Intransitive verb, thus answering to the form *go* of the specimen verb given above. *Kishti-à-rü* is dative, from *kishti-à* obl. crude form of *kishti* (a foreign word). *Tsò-a* is oblique of *tsò* (the Tibetan word for "lake"). *Nà-çito* (lit. "not seen") is negative of Past Participle of following verb (to see); *çit* is Past tense transitive agreeing with its object *yé* "what" (i. e., not taking the termination in—*ös* or *ēs* appropriated to the 1st persons sing. and plural); the instrumentative case of the agent, *tü-ya*, is understood. *Razit* is the same form as *shunät*, and so is *çit* which follows. *Nüpädös* seems at first sight abnormal, for "to arrive" is an intransitive verb, and yet it has taken the form peculiar to the Past of transitive verbs. But in reality it is quite normal: only the Bròkpà verb means "to cause to arrive" (*P. rasànīdan*). E. g. *mi-ya dāk nüpāt* "I delivered the post" (lit. 'by me the post was caused to arrive'). Thus *moñ*..... *nüpädös* of the text, is literally: "I..... was caused to arrive" or, as we should say: "I arrived." The full form would be: *Kishti-ya moñ nüpädös* (lit. by the ship I was caused to arrive) "the ship caused me to arrive."

But although this Past tense of Transitive Verbs so much resembles a Passive in construction, yet there is as much distinction kept up in the

mind of the speaker between it and the real Passive, as there is for instance in Hindustani between *us-ne aurat màri*, and *aurat màri gai*. The sense is active though the form is passive. In the one case the agent is known and generally mentioned in the Instrumentative case; in the other the agent is not known or mentioned.

DÁH-HANU LOVE SONG.

Mi mūshū Skishur qaniya kāsikyé skyet-tò

I young-man (pro. name mountain below if-I-look
of place)

Bòs payül ži-chuñ; toto huñskyé skyet-tò

Father's home see makes; and above if-I-look

Nūmēs payül ži-chuñ. Žū-lo Qodà nasīb tūni té.

(name of woman) home see-makes. Pray God fate joined make.
in genitive

"If I look below, from the Skishur mountain,

"My father's home is seen (makes itself seen);

And if I look above,

"Nūmé's home is seen. Grant, O God, that
our destinies may be united!"

ANALYSIS: *Skyet-tò* is the Conditional, answering to *kutet-tò*. *Payül* would seem to be compounded of the Tibetan word *yül* "village" and a prefix *pa*. *Ži-chuñ* is composed of the verb "to see", plus the 3rd pers. sing. of the aorist of the verb "to do", answering to the typical form *kutyuñ*. *Zu-lö* is the Bròkpà form of the common Tibetan salutation *jü* or *ju-lé*, which is like the Hind. *jí*. *Qodà* (*Khudà*) and *nasīb* are words borrowed from their Musalmàn neighbours, apparently in the absence of any words of the same meaning in their own dialect. *Té* is the Imperative.

II. *Dràs Dialect.*

THE SUBSTANTIVE.

Singular.	Plural.
N. <i>esh</i> or <i>ez</i> .....a ewe	<i>ezé</i> } ewes
<i>esh-sa</i> (before transitive verbs, not in Past Tense)	<i>ezé-sa</i> }
G. <i>ezo</i> .....of a ewe	<i>ezo</i> .....of ewes
D. & Loc. <i>ezu-re</i> .....to, or at a ewe	<i>ezo-re</i> .....to, or at ewes
Acc. <i>ezu</i> .....a ewe	<i>ezo</i> .....ewes
Abl. <i>ezu-žo</i> .....from a ewe	<i>ezo-žo</i> .....from ewes
<i>ezu-séi nálà</i> .....with a ewe	<i>ezo-séi nálà</i> .....with ewes
Instr. <i>ezu</i> (before Trans.) }	<i>ezo-ža</i> .....by ewes
Verbs in Past tense) } by a ewe	

N. <i>äi</i> a she-goat <i>äi-sa</i> (before Trans. Verbs not in Past Tense)	<i>äie</i> } <i>äie-sa</i> } she-goats
G. <i>äio</i> of a she-goat	<i>äio</i> of she-goats
D. & Loc. <i>äi-re</i> ... to, or at a she-goat	<i>äio-re</i> to, or at she-goats
Acc. <i>äi</i> a she-goat	<i>äio</i> she-goats
Abl. <i>äi-zo</i> from a she-goat	<i>äio-zo</i> from she-goats
<i>äi-säi nälä</i> with a she-goat	<i>äio-säi-nälä</i> with she-goats
Instr. <i>äio</i> ... (before... by a she goat Trans. verbs in Past Tense)	<i>äio-za</i> by she goats
N. <i>gòr</i> a house <i>gòr-sa</i> (before Tr. v. not in Past Tense)	<i>gòri</i> } <i>gòri-sa</i> } houses
G. <i>gòr-o</i> of a house	<i>gòro</i> of houses
D. & Loc. <i>gòr-re</i> ... to, or at a house (sometimes— <i>ra</i>)	<i>gòro-ra</i> to, or at houses
Acc. <i>gòr</i> or <i>gòr-re</i> a house	<i>gòro</i> or <i>gòro-ra</i> ... houses
Abl. <i>gòr-zo</i> from a house (in some-no)	<i>gòro-zo</i> from houses
Instr. <i>gòr-i</i> by a house (before Trans. Verbs in Past Tense)	<i>gòro-za</i> by houses

ADJECTIVES do not seem to change for Gender.

PRONOUNS.

N. <i>moñ</i> I <i>moñ-sa</i> (before Tr. V., not Past T.)	<i>bé</i> we <i>bé-sa</i> (before Tr. V., not Past T.)
G. <i>mioñ</i> of me, my	<i>asso</i> of us, our
D. } & Loc. } <i>moñ-re</i> to, or at me	<i>asso-re</i> to, or at us
Acc. <i>moñ</i> me	<i>asso</i> us
Abl. <i>moñ-zo</i> from me	<i>asso-zo</i> from us
Instr. <i>mi</i> (before Tr. by me Vbs. in Past Tense)	<i>asso-za</i> by us

N. <i>tù</i>		<i>tsó</i> (f. <i>tsà</i>)	
<i>tú-sa</i> (before Tr.	} thou	<i>tsó-sa</i> (before Tr.	} ye
V. not in Past		V. not in Past	
Tense)		Tense)	
G. <i>tó</i> (or <i>túin</i> ?).....	of thee, thy	<i>tsó</i> (or <i>tsòin</i> ?)	of you
D. <i>tù-re</i>	to thee	<i>tsó-re</i>	to you
Acc. <i>tú</i>	thee	<i>tsó</i>	you
Abl. <i>tú-zo</i>	from thee	<i>tsó-zo</i>	from you
<i>túin-séi nála</i>	with thee	<i>tsó-séi nála</i>	with you
Instr. <i>tó</i>	by thee	<i>tsò-ga</i> (<i>tsá-ga</i> f.).....	by you

Pronouns Substantival and Adjectival.

Singular.		Plural.	
N. <i>nú</i> or <i>àò</i> or <i>ánu</i> or <i>aiñ</i> (fem. <i>ni</i> or <i>á</i> or <i>ani</i>)	} this	<i>ni</i> or <i>ani</i>	} these
<i>nú-sa</i> or <i>anu-sa</i> (f. <i>ni-sa</i> or <i>ani-sa</i> (before Tr. V. not in Past T.))		<i>ni-sa</i> or <i>ani-sa</i> (before Tr. V. not Past T.)	
G. <i>niso</i> or <i>niséi</i> , or <i>ani-so</i> , <i>ani-séi</i>		<i>nino</i> or <i>anino</i>	of these
D. <i>nisé-re</i>	to this	<i>nino-ré</i> or <i>anino-ré</i> ...	to these
Acc. <i>nisé</i> -or <i>àin</i>	this	<i>nino</i> or <i>anino</i>	these
Abl. <i>nisé-zo</i>	from this	<i>nino-zo</i> or <i>anino-zo</i> ...	from these
Instr. <i>nisi</i>	by this	<i>nino-ga</i> or <i>anino-ga</i> ...	by these

When these pronouns are prefixed to substantives, their case-affixes are detached from them and placed after the substantives only, in the form peculiar to the latter; e. g., *ani mazàr-tang-o*, not *ani-so mazàr-tang-o*.

N. <i>rò</i> (<i>ré</i> fem)		<i>ré</i> or <i>pero</i> (f. <i>ra</i>)	
<i>rò-sa</i> (f. <i>ré-sa</i>).	} that	<i>ré-sa</i> (f. <i>ra-sa</i>) be-	} those
before Tr. V. not		fore Tr. V. not	
in Past Tense		Past Tense	
G. <i>sò</i> or <i>aso</i> (f. <i>résò</i>)...	of that	<i>reno</i> or <i>peràno</i>	of those
also <i>asé-séi</i>		(f. <i>rano</i>)	
D. <i>sé-ré</i> or <i>asé-ré</i>	to that	<i>reno-re</i> or <i>peràno-re</i> to those	
(f. <i>résé-ré</i>)		(f. <i>rano-re</i>)	
Acc. <i>sé</i> or <i>asé</i> or <i>do</i> ...that		<i>reno</i> or <i>peràno</i>	those
(f. <i>résé</i>)		(f. <i>rano</i>)	
Abl. <i>sé-zo</i> or <i>asé-zo</i> ...from that		<i>reno-zo</i> or <i>peràno-zo</i> ...from those	
(f. <i>résé-zo</i>)		(f. <i>rano-zo</i>)	
Instr. <i>sési</i> or <i>àsi</i>	by that	<i>reno-ga</i> or <i>perano</i> ...by those	
(f. <i>résé</i>)		<i>ga</i> (f. <i>rano-ga</i>)	

Relative Pronoun.		Personal Adjectival Pronouns.	
N. <i>ké</i> or <i>kési</i> (?)	who	<i>miàno</i>	my own
G. <i>késo</i>	of whom	<i>tàno</i>	they own
D. <i>késé-re</i>	to whom	<i>resano</i> or <i>tomo</i>	his own
Acc. <i>késé</i> (?)	whom	<i>assano</i>	our own
Abl. <i>késé-zo</i> (?)	from whom	<i>tsano</i>	your own
Instr. <i>ké-si</i>	by whom	<i>renano</i> or <i>tomo</i>	their own

The Relative Pronoun is used like the Hindustani *jo*, *jis-ka*, &c., followed by a corresponding demonstrative pronoun later in the sentence : a pronoun *do* seems to be specially employed for this, like *so* in Hindustani, but the other demonstrative pronouns are also used.

THE VERB "to be."

Present and Future.

M.		F.	
S. 1.	<i>moñ hānos</i> or <i>hañs</i>	<i>moñ hānis</i>	I am or shall be
2.	<i>tu hāno</i> or <i>haoñ</i>	<i>tu hāni</i>	thou art &c.
3.	<i>ro hāno</i> or <i>haoñ</i>	<i>ré hāni</i>	he, she is &c.
Pl. 1.	<i>bé hānis</i> or <i>hāñs</i>	<i>bé hāñs</i>	we are &c.
2.	<i>tso hānet</i> or <i>hāñt</i>	<i>tso hāñt</i>	ye are &c.
3.	<i>ré hāñ</i>	<i>ra hānié</i>	they are &c.

Past (Imperfect).

S. 1.	<i>moñ àsilòs</i>	<i>moñ àsilyis</i>	I was (lit. I was being)
2.	<i>tu àsilo</i>	<i>tu àsilie</i>	thou wast
3.	<i>ro àsilo</i>	<i>ré àsilie</i>	he, she was
Pl. 1.	<i>bé àsilie</i>	<i>bé àsilyis</i>	we were
2.	<i>tso àsilet</i>	<i>tso àsiliet</i>	ye were
3.	<i>ré àsile</i>	<i>ra àsilie</i>	they were

CONDITIONAL.

Past.

S. 1.	<i>moñ àsilòzto</i>	<i>moñ asilazto</i>	if I were
2.	<i>tu asiloto</i>	<i>tu asilato</i>	if thou wert
3.	<i>ro asilto</i>	<i>ré asilto</i>	if he, she were
Pl. 1.	<i>be asilezto</i>	<i>bé asilaseto</i>	if we were
2.	<i>tso asiletto</i>	<i>tso asilateto</i>	if ye were
3.	<i>re asilto</i>	<i>rà asilato</i>	if they were

THE IRREGULAR VERB "to become."

Present.

Infinitive and Supine : *bono* "to become," or, "in order to become."
Imperative, *bé* "become."

	Masc.	Fem.	
S. 1.	<i>moñ bòmōs</i>	<i>moñ bomis</i>	I am becoming
2.	<i>tu bé</i>	<i>tu be</i>	thou art becoming
3.	<i>ro beno</i>	<i>ré bene</i>	he, she is becoming
Pl. 1.	<i>bé bonas</i>	<i>bé bonas</i>	we are becoming
2.	<i>tso bat</i>	<i>tsa bat</i>	ye are becoming
3.	<i>ré bena</i>	<i>ra bena (?)</i>	they are becoming

Present Future.

S. 1.	<i>moñ bom</i>	<i>moñ bom</i>	I become <i>or</i> shall become
2.	<i>tu besh</i>	<i>tu besh</i>	thou becomest &c.
3.	<i>ro bei</i>	<i>ré bei</i>	he, she becomes &c.
Pl. 1.	<i>bé bon</i>	<i>bé bon</i>	we become &c.
2.	<i>tso bat</i>	<i>tsa bâte</i>	ye become &c.
3.	<i>ré ben</i>	<i>ra beni</i>	they become &c.

Imperfect.

S. 1.	<i>moñ bom-alos*</i>	<i>moñ bom-alis</i>	I was becoming
2.	<i>tu biàlo (?)</i>	<i>tu biàle (?)</i>	thou wast becoming
3.	<i>ro biàlo (?)</i>	<i>re biàlie (?)</i>	he, she was becoming
Pl. 1.	<i>bé bôn-alés</i>	<i>be bon-alyis</i>	we were becoming
2.	<i>tso bialet (?)</i>	<i>tsa biàliet (?)</i>	ye were becoming
3.	<i>re beñ-ale</i>	<i>ra ben-alie</i>	they were becoming

Perfect.

S. 1.	<i>moñ bilos*</i>	<i>moñ bilies</i>	I have become, <i>i. e.</i> , I am
2.	<i>tu bilo</i>	<i>tu biliesh</i>	thou hast become, <i>i. e.</i> ,
			thou art
3.	<i>ro bilo or bil</i>	<i>ré bilí</i>	he, she has become, <i>i. e.</i> , is
Pl. 1.	<i>bé biles</i>	<i>bé bilies</i>	we have become, <i>i. e.</i> , are
2.	<i>tso bilet</i>	<i>tsa bilieti</i>	ye have become, <i>i. e.</i> , are
3.	<i>ré bilén</i>	<i>ra bilyen</i>	they have become, <i>i. e.</i> , are

Pluperfect.

S. 1.	<i>moñ bilalos</i>	<i>moñ bilalyis</i>	I had become
2.	<i>ta bilàlo</i>	<i>tu bilàlie</i>	thou hadst become
3.	<i>ro bilàlo</i>	<i>ré bilàlie</i>	he, she had become
Pl. 1.	<i>bé bilales</i>	<i>bé bilàlies</i>	we had become
2.	<i>tsa bilàlet</i>	<i>tsa bilàliet</i>	ye had become
3.	<i>ré bilàle</i>	<i>ra bilàlie</i>	they had become

CONDITIONAL.

Present.

S. 1.	<i>moñ biloxto</i>	<i>moñ bilàxto</i>	if I become
2.	<i>tu biloto</i>	<i>tu bilàto</i>	if thou becomest
3.	<i>ro bilto</i>	<i>ré bilto</i>	if he, she become
Pl. 1.	<i>bé bilexto</i>	<i>bé bilàseto</i>	if we become
2.	<i>tso biletto</i>	<i>tsà bilateto</i>	if ye become
3.	<i>ré bilto</i>	<i>rà bilàto</i>	if they become

THE INTRANSITIVE VERB "to go."

Infinitive and Supine : *bozóno* "to go" and "in order to go."

Imperative : *bo* or *bozé* "go."

Verbal Adjectives : *bozensto* "going", *bozeta* "having gone."

Present.

	Masc.	Fem.	English.
S. 1.	<i>moñ bòzumus</i>	<i>moñ bozumis</i>	I am going
2.	<i>tu bòzaoñ</i>		thou art going
3.	<i>ro bòzon</i> or <i>bòzéuñ</i>	<i>re bozani</i>	he, she is going
Pl. 1.	<i>bé bòzunàs</i> or <i>bònàs</i>		we are going
2.	<i>tso bòzàt</i>	<i>tsà bozàt</i>	ye are going
3.	<i>ré bòzena</i>	<i>ra bozéin</i>	they are going

Imperfect.

S. 1.	<i>moñ bòzum-alòs*</i>	<i>moñ bòzum-alis</i>	I was going
2.	<i>tu bòzalo</i>	<i>tu bòzale</i>	thou wast going
3.	<i>ro bòzalo</i>	<i>re bòzalié</i>	he, she was going
Pl. 1.	<i>bé bònàlès</i>	<i>bé bònaliés</i>	we were going
2.	<i>tso bòzàlet</i>	<i>tsà bòzàliet</i>	ye were going
3.	<i>ré bòzenalé</i>	<i>ra bòzenalié</i>	they were going

Present Future.

S. 1.	<i>moñ bòzum</i>		I go or shall go
2.	<i>tù bòzé</i>		
3.	<i>ro bòzéi</i>	<i>ré bòzéi</i>	
Pl. 1.	<i>bé bòzon</i> (or <i>bon</i> ?)		
2.	<i>tso bòzàt</i>	<i>tsà bozàté</i>	
3.	<i>ré bòzen</i>	<i>ra bozeni</i>	

Future.

S. 1.	<i>moñ bōzum bil</i>	...	...	...	I shall go &c.
2.	<i>tu bōzé bil</i>	...	...	...	thou wilt go
3.	<i>ro bōzéi</i>	...	...	...	he will go
Pl. 1.	<i>bé bōzon bil</i>	...	...	...	we shall go
2.	<i>tso bōzāt bil</i>	...	...	...	ye will go
3.	<i>ré bōzén bil</i>	...	...	...	they will go

Compound Future.

S. 1.	<i>moñ bōno hāñs</i>	...	...	...	I am to go
2.	<i>tu bōno haoñ</i>	...	...	...	thou art to go
3.	<i>ro bōno haoñ</i>	...	...	...	he is to go
Pl. 1.	<i>bé bōno hānis</i>	...	...	...	we are to go
2.	<i>tso bōno hānet</i>	...	...	...	ye are to go
3.	<i>ré bōno hāñ</i>	...	...	...	they are to go

Past.

S. 1.	<i>moñ gās*</i>	<i>moñ gyés</i>	I went
2.	<i>tu gās*</i>	<i>tu gyé</i>	thou wentest
3.	<i>ro gās*</i>	<i>ré gyéē</i>	he, she went
Pl. 1.	<i>bé gyès</i>	<i>bé gyéés</i>	we went
2.	<i>tso gyet</i>	<i>tsà gyèti</i>	ye went
3.	<i>ré gyé</i>	<i>ra gyéé</i>	they went

Perfect and Pluperfect.

S. 1.	<i>moñ gālōs*</i>	<i>moñ gālīs</i>	I have or had gone
2.	<i>tu gālo</i>	<i>tu gālē</i>	thou hast or hadst gone
3.	<i>ro gālo</i>	<i>ré gālīé</i>	he, she has or had gone
Pl. 1.	<i>bé gālīs</i>	<i>bé gālyis</i>	we have or had gone
2.	<i>tso gālet</i>	<i>tsà gālīet</i>	ye have or had gone
3.	<i>ré gālē</i>	<i>ra gālīē</i>	they have or had gone

CONDITIONAL.

Present Future.

S. 1.	<i>moñ bozeto</i>	...	...	...	if I go
2.	<i>tu bozeto</i>	...	...	...	if thou goest
3.	<i>ro bozeito</i>	...	...	...	if he goes
Pl. 1.	<i>bé bozunto</i>	...	...	...	if we go
2.	<i>tso bozatto</i>	...	...	...	if ye go
3.	<i>ré bozeñto</i>	...	...	...	if they go

Preterit.

S. 1.	<i>moñ gālōsto</i>	<i>moñ gālāzto</i>	if I had gone
2.	<i>tu gālōto</i>	<i>tu gālāto</i>	if thou hadst gone
3.	<i>ro gielto</i>	<i>ré gielto</i>	if he had gone

Pl. 1.	<i>bé galexto</i>	<i>bé galàseto</i>	if we had gone
2.	<i>tso galexto</i>	<i>tsà galàteto</i>	if ye had gone
3.	<i>ré gielto</i>	<i>rà galàto</i>	if they had gone

	Masc.	Fem.	English.
Pl. 1.	<i>bé galexto</i>	<i>bé galàseto</i>	if we had gone
2.	<i>too galexto</i>	<i>tsà galàteto</i>	if ye had gone
3.	<i>ré gietto</i>	<i>tà galato</i>	if they had gone

Probably all these tenses (Imperfect or Past, Perfect, and Pluperfect) are compounded of some auxiliary verb-tense running as follows (there is actually such a verb meaning "I came, &c.") :

	Masc.	Fem.		Masc.	Fem.
S.	<i>alòs</i>	<i>alis</i>	Pl.	<i>alès</i>	<i>aliès</i>
	<i>alo</i>	<i>alé</i>		<i>alet</i>	<i>aliet</i>
	<i>alo</i>	<i>alié</i>		<i>alè</i>	<i>aliè</i>

to which are prefixed the various verbal stems or complete verb tenses, person for person. In many cases the combination has subsequently suffered from elision.

E. g., *bił-àlòs*, &c., would be an uncorrupted example. The stem and the auxiliary tense are both perfect, and the former does not vary with the persons.

In *gàlos*, *gàlo*, &c., the verb root (probably *gá*) has suffered its vowel to coalesce with the initial vowel of the auxiliary.

In *bozum-alòs*, *boz-alo*, &c., the auxiliary has destroyed the final syllables of the verb tense, excepting in the 1st pers. Sing. and the 3rd pers. Plural.

In *àsilòs*, *biłòs*, &c., the initial vowel of the auxiliary has itself suffered alteration from the pressure of the verb-root before it.

In the root *as* (of *àsilos* "I was"), and the root *bi* or *be* (of *bilos* ? *bi-alòs*, "I have become"), we have perhaps representatives of the universal Arian roots, *bhu* and *as* for the idea of "being" or "existence."

In some verbs the terminations are *òs*, *-ò*, *-ò*.

If again we subdivide the auxiliary tense *alòs*, &c., into its root *al* and its terminations *-òs*, *-o*, *-o*, *ès*, *-et*, and *-e*, it would appear that it was by the addition of these latter to the Present Future Tense, that the Present Tense was formed :

<i>E. g.</i>	Pr.	Fut. Tense.	Termn.	Present Tense.	Pr.	Fut. Tense.	Termn.	Present Tense.
<i>bozum</i>			<i>òs</i> ...	<i>bòzumus</i> .	<i>bòzon</i>		<i>ès</i>	<i>bòzonàs</i> .
<i>bozé</i>			<i>o</i> ...	<i>bozao</i> (<i>ñ</i>).	<i>bòzàt</i>		<i>et</i>	<i>bòzàt</i> .
<i>bozèi</i>			<i>o</i> ...	<i>bozéu</i> (<i>ñ</i>).	<i>bòzen</i>		<i>é</i>	<i>bòzena</i> .

TRANSITIVE VERBS are conjugated like intransitive ones. But they show traces of the quasi-Passive formation with the subject in the Instrumentative Case, such as we find in the Past Tenses in Hindustani and in

the Dàrd dialect of Dàh-Hanu (see above). As in the latter, the subject takes a special form in the Past tenses, the singular taking an affix or termination, generally *-i*, and the Plural *-za* (cf. Dàh-Hanu *-ya*); but unlike in that dialect the verb agrees with its proper subject (in the Instrumentative case) and not with its object. In the other Tenses the subject takes the affix *-sa* as in the Dàh-Hanu dialect. This in both dialects is now a simple variety of the nominative.

These facts I think corroborate the hypothesis that the Dàh-Hanu people formed an earlier migration than the Dràs Dàrds. For they retain most fully the quasi-Passive formation of the Past of Transitive Verbs, which we find again in the Indian dialects (from which they had less opportunity of borrowing than the Dràs people had). It was therefore perhaps an early Dàrd formation of which all but slight traces have been lost by the later Dàrds.

THE TRANSITIVE VERB "to strike."

Infinitive and Supine = *kutino* "to strike" and "in order to strike."
= *kutiokuni* "in striking."

Imperative: *kuté* "strike."

Verbal Adjectives: *kutiensto* "striking," *kutéta* and *kutetato* "having struck."

Present.

	Masc.	Fem.	English.
S. 1.	<i>moñ-sa kutémus</i>	<i>moñ-sa kutémis</i>	I am striking
2.	<i>tu-sa kutàon</i>	<i>tu-sa kutàn (?)</i>	thou art striking
3.	<i>ro-sa kuténo</i> or <i>kutéuñ</i>	<i>ré-sa kuténi</i>	he, she is striking
Pl. 1.	<i>bé-sa kutónàs</i>	<i>bé-sa kutònàs</i>	we are striking
2.	<i>tso-sa kutiàt</i>	<i>tsà-sa kutiàt</i>	ye are striking
3.	<i>ré-sa kuténa</i> (or <i>kuty- òna</i>).	<i>rà-sa kutéiñ (?)</i>	they are striking

Present Future.

S. 1.	<i>moñ-sa kutem</i>	.....	I strike <i>or</i> shall strike
2.	<i>tu-sa kutez</i> or <i>kuté</i>	.....	thou strikest <i>or</i> wilt strike
3.	<i>ro-sa kutéi</i>	<i>ré-sa kutii</i>	he, she strikes <i>or</i> will strike
Pl. 1.	<i>be-sa kutòn</i>	.....	we strike <i>or</i> shall strike
2.	<i>tso-sa kutiàt</i>	.....	ye strike <i>or</i> will strike
3.	<i>ré-sa kuten</i>	<i>rà-sa kuteni</i>	they strike <i>or</i> will strike

Compound Future.

S. 1.	<i>moñ-sa kutiòno hans</i>	<i>moñ-sa kutiòno hànìs</i>	I am to strike
2.	<i>tu-sa kutiòno haoñ</i>	<i>tu-sa kutiòno hànì</i>	thou art to strike
3.	<i>ro-sa kutiòno haoñ</i>	<i>ré-sa kutiòno hànì</i>	he, she is to strike

Pl. 1. <i>bé-sa kutiðno hānis</i>	<i>bé-sa kutiðno haiñs</i>	we are to strike
2. <i>tso-sa kutiðno hānet</i>	<i>tsā-sa kutiðno haiñt</i>	ye are to strike
3. <i>ré-sa kutiðno hāñ</i>	<i>re-sa kutiðno hānié</i>	they are to strike

Imperfect.

S. 1. <i>moñ-sa kutemàlðs</i>	<i>moñ-sa kutemàlís</i>	I was striking
2. <i>tu-sa kutàlo (kutàlòr)</i>	<i>tu-sa kutàlé</i>	thou wast striking
3. <i>ro-sa kutélo</i>	<i>ré-sa kutélié</i>	he, she was striking
Pl. 1. <i>bé-sa kutonàlés</i>	<i>bé-sa kutonàlyis</i>	we were striking
2. <i>tso-sa kutiàlet</i>	<i>tsa-sa kutiàliet</i>	ye were striking
3. <i>ré-sa kutenalé</i>	<i>rà-sa kutenalié</i>	they were striking

Past.

S. 1. <i>mi kutàs (in some verbs -ðs)</i>	<i>mi kutiès</i>	I struck
2. <i>tò kutà(-o)</i>	<i>to kuté</i>	thou struckest
3. <i>se-si kutàu(-o)</i>	<i>re-si kutí</i>	he, she struck
Pl. 1. <i>asso-za kutiès</i>	<i>asso-za kutiées</i>	we struck
2. <i>tso-za kutiét</i>	<i>tsa-za kutièti</i>	ye struck
3. <i>reno-za kutié</i>	<i>rano-za kutië</i>	they struck

Perfect and Pluperfect.

S. 1. <i>mi kutàlðs</i>	<i>mi kutàlís</i>	I have <i>or</i> had struck
2. <i>tò kutalo (kuté-àsilòr)</i>	<i>tò kutàli</i>	thou hast <i>or</i> hadst struck
3. <i>se-si kutàlo</i>	<i>re-si kutàli</i>	he, she has <i>or</i> had struck
Pl. 1. <i>asso-zo kutiàlis</i>	<i>asso-za kutiàlyis (?)</i>	we have <i>or</i> had struck
2. <i>tso-za kutiàlet</i>	<i>tso-za kutiàliet (?)</i>	ye have <i>or</i> had struck
3. <i>reno-za kutiàlé</i>	<i>rano-za kutiàli</i>	they have <i>or</i> had struck

CONDITIONAL.

Present.		Past.	
S. 1.	<i>moñ-sa kuteto</i> if I strike	<i>moñ-sa kutàlðzto</i>	if I have <i>or</i> had struck
2.	<i>tu-sa kuteto</i> if thou strikest	<i>tu-sa kutàlðto</i>	if thou hast <i>or</i> hadst struck
3.	<i>ro-sa kutéito</i> if he strike	<i>ro-sa kutilto</i>	if he has <i>or</i> had struck
Pl. 1.	<i>bé-sa kutunto</i> if we strike	<i>bé-sa kutàlezto</i>	if we have <i>or</i> had struck
2.	<i>tso-sa kutiàtto</i> if ye strike	<i>tso-sa kutàletto</i>	if ye have <i>or</i> had struck
3.	<i>re-sa kuteñto</i> if they strike	<i>ré-sa kutilto</i>	if they have <i>or</i> had struck

TRANSLATION OF STORIES FROM FORBES'

PERSIAN GRAMMAR.

1.* Ek-i kôzâlo Afratun-re: "Lâ bariri nawi-za (? ra)
one (Instr.) had-asked Plato (Loc.) many years ship in (Loc.)

bêtalo ; tò sara-za (? ra) là safar t'hà. Tò sara
(thou) hast-sat thou (Instr.) sea in (Loc.) much voyage madest. Thou (Ina.) sea
-za (? ra) 'ajâib zok pàshâ?" Afratun-i ràjàu: "moñ salâmat-gi
in (Loc.) wonders what sawest? Plato (Instr.) said: I in-safety

sara-zo kâtôs chupe-re, âiñ mi pàshâs 'ajâib.
sea from came-out shore to this I (Instr.) saw wonderful.

2. Ek paqîrek gàu grestok-o dârr-ré di zek mangàu
a beggar went farmer's door to (?) something demanded

Ara-no jawâb kâti: Gôr-ré chéi nûsh. Paqîr-i
Inside from answer came-out (f.): House (Loc.) woman is not. Beggar (Instr.)
ràjàu: mi tiki tòrik mangâlôs mi chéi né mangàs,
said: I (Instr.) bread piece had-demanded I (Instr.) (the) woman not demanded,
moñ-re à jawâb lâdôs.†
me to this (f.) answer arrived.

4. Ek hakim dezgâo bôzalo mâzâr-tang-ra; tòmo pàsho muka-re
a doctor daily used-to-go grave-yard-to his own shawl face to
paliéta bôzalo. Zâko-za kozié: Ani-séi zok sabab hâni?
having-wrapped used-to-go. People (Instr.) asked: this of what reason is (f.)?

Hakim-i ràjàu: Ani mâzâr-tang-o mùò-re moñ sharmanda
Doctor (Instr.) said: This (f.) grave-yard (Gen.) dead (Loc.) I ashamed
hânds: mioñ ràbâti keta mùé.
am: my medicine having-eaten (they) died.

8. Ek manuzo-re bwâro krum làdo. Ek dôtèk (mubârak)
bubârek
a man to big work (office) arrived. A friend congratulation

t'hièno âlo. Sé-si kòzâu: Tu koi bilo, ki âlo? So dôt
in-order-to-make came. That (one) asked: Thou who art, why camest? His friend

* The numbers are those of the stories in the order given in Forbes' Persian Grammar.

† Here the verb seems to be governed by the person of the Locative or Dative as in other cases it is by that of the Instrumentative. Normally one would think this ought to be *moñ-re à jawâb lâdô* or *moñ à jawâb* —
me to this answer reached (3rd pers.) I this answer received (1st pers.)

sharmanda bilo, ràjàu: Tu-sa moñ sužân t'hé nūsh dà.
 aahamed has-become, said: Thou (2nd nom.) me recognition makest is not ?

Moñ to purono dōst bilōs, moñ to mutro ròno àlōs; moñ parudōs
 I thy old friend am I thy presence to weep came; I heard
 tu shēiloñ t'hé.
 thou blind makest (becomest).

COMPARATIVE TABLE OF A FEW ORDINARY WORDS IN
 THE DRAS DIALECTS OF DAH-HANU AND OF DRAS.

N. B. Kashmiri words added for comparison are marked K. and
 Gaddi (Hindi) G. H. Resemblances to ordinary Hindi are not noted.

<i>English.</i>	<i>Dah-Hanu.</i>	<i>Dras.</i>
man	mūsh	manužo
father	bò	bàbo
mother	ài	àzé (cf. Gaddi Hindi <i>ijji</i>)
son	biū	push
daughter	moléi	dih
girl	.....	molai
child	sinà	balé
elder brother	bàyo	kàko
younger brother	ržà	žà
wife or woman	tchigà	chéi
grandson	potro	potro
heart	hō	hio
stomach	krūtpa (Tib.)	dér
head	shish	shish
eye	atchi	àché (K. <i>ach</i>)
ear	kàni	kon
nose	nutò	noto
tooth	dàni	doni
beard	rmaghrà	dài
breast	krō	kroō
waist	doko	dakhri
hand	hàt'h	hàt
foot	kūti	pé
lower leg	kankan	kiñ (pl. kiñyi)
knee	kutò	kuto
thigh	patàli	patàlò

<i>English.</i>	<i>Dàh-Hanu.</i>	<i>Dràs.</i>
bone	àti	àti
hair	zàkur	zàku
mouth	uzi	azi (K. <i>ds</i>)
lip	ōti	ētò { azino = upper karino = lower
tongue	gip	zíp
chin	.....	mulsutì or chamukhi
finger	güli	añguyé
name	nüñ	nòm
grass	ghàs	kash
road	pùn	pon
apricot	zū	zuzu
leaf	pani	paté
birch (tree)	rūsh (zūsh)	zozì
wheat	güm	güm
barley	ghono	yò
field	.....	trèsh
cultivator	.....	grestok ;* grest (<i>gròst</i> Kashmir)
flower	pusho	pushi
cow	gô	gào
crow	qù	korkus
horse	àpsh	àshp
dog	shüà	shuñ (Kashm. <i>hùn</i>)
cat	bülù	pushu
ram	churdi	karà
ewe	èi	esh
he-goat	mingyar	mugir
she-goat	à	ài
bull	gôlo	dòno
calf	bitok	batsar (<i>watsir</i> , K.)
lamb	run	urun (<i>urnu</i> , G. H.)
kid	chal	chàl (<i>chélu</i> , G. H.)
cattle	gölé	dòni (<i>dand</i> , G. H.)
male	p'hòg (Tib.)	bíro
female	mòg (Tib.)	soñti
milk	düt	dud
cream	üspris	shamal
wool	pash	pash
bear	.....	ish
frog	chüstrák	manòk

* *ok* or *ek* seems to be a termination and not a part of the word. Cf. *dòstek* for *dòst*.

<i>English.</i>	<i>Dàh-Hanu.</i>	<i>Dràs.</i>
sun	sūri	sur
star	turi	tàré
earth (ground)	pà	sum
moon	gyün	yün (<i>zün</i> K.)
mountain	rüng	qaniya
pasture (alp)	nirda	shiaī
rock	churr	chiř
ravine	bàrr	shung
river	sin	sín
water-course, canal	gyáp	yáp
rain	charchü	mэг
snow	àřu	hin (K. <i>shin</i>), àřo (rain or snow)
avalanche	.....	hināl
ice	gañs (Tib.)	sòr
water	ūà	wēī
year	sar	barir
month	muñs	moñs (<i>màns</i> K.)
day	dis	chag
spring (season)	bazun	bàzdno
summer	ulo	uwàlo
autumn	sharò	shàré
winter	yuno	yòno
to-day	àsh	àsh
yesterday	run	
to-morrow	rutti	
the day before yes- terday	dòg-dis	
night	ràt	ràti
work	krüm	krum
bread	manili	tiki
village	bön	
house	gòt	gòř
<i>the town of Dràs</i>	Hembabs (Tib.)	Hunmas
door	dàrr	darr
bow	shà	dàhnu
arrow	qùn	qòn (K. <i>kàn</i>)
iron	chingàr	chimir
smell	ghun	gon
big	bono	bwàro
little	so	chuno (<i>chun</i> Tib.)

<i>English.</i>	<i>Dāk-Hanu.</i>	<i>Drās.</i>
old	.....	purōno *
new	nō	nào
wet	haridho	azo
dry	shuko	shuko
black	kyono	kino
white	sno	sho
red	lodo	lào
I	moñ (<i>Gen.</i> miü)	moñ (<i>Gen.</i> mioñ, <i>K.</i> miön)
we	bà or beng (<i>obl.</i> assü)	bé (<i>obl.</i> asso, <i>K.</i> as)
thou	tü	tù
ye	tsi (<i>obl.</i> tsü)	tso (<i>K.</i> tse)
this (masc.)	so (<i>obl.</i> té) (<i>K.</i> so)	nu (<i>obl.</i> nisé)
this (fem.)	sa	ni
these (m.)	té (<i>obl.</i> ten)	ni (<i>obl.</i> nino)
that (m.)	p'ho	ro (<i>obl.</i> sé)
that (f.)	p'ha	ré (<i>obl.</i> résé)
those (m.)	p'hé (<i>obl.</i> p'héün)	ré or però (<i>obl.</i> reno)
those (f.)	.....	rà (<i>obl.</i> rano)
who (relve.)	.....	kési
who?	ko	kōi
what?	yé	zok
beyond	beski	pàri
this side of	ägü	wàri
towards	suri, lokshyé	wari
there yonder	pàri	perà
with	sūma or tsi-sūma	séi-nàlà
thus	hang	
first (adv.)	yàr	meza
there	potsi	
there is	là, (pl. län) or bet	
much	} m.	lào
or		
many		lài
very	.....	là
I do	chü or tü	t'hièno (to do)
I did	tet	t'hàs

* Pronounced also *prono* and *prân*; as in *Prân-Drās*, a village near Drās, called by Englishmen *Pāndrās*, and sometimes wrongly derived from *Pāyin* "low." The name given by Moorcroft for the Drās lucerne grass, viz. *prangos*, is perhaps merely *prân-kash* "old grass," i. e. "hay;" as lucerne forms the winter fodder of the cattle in the state of hay.

*English.**Dàh-Hanu.**Dràs.*

strike	kuté	kuté (<i>Inf.</i> kutiòno and diòno)
died	mũ	muñ (<i>Inf.</i> miriòno)
broke	pitit	potàu
hear	qun-té (imp.)	paruzòno (<i>Inf.</i>)
write	zbri-té (imp.)	likiòno (<i>Inf.</i>)
drink	pi (imp.)	piòno (<i>Inf.</i>)
eat	.....	ké (imp.) (K. <i>khe.</i>)
sleep (imp.)	sò	sò, (<i>Inf.</i> sòno)
sleep (subs.)	nish	nish
lick	li	
weave	bo (imp.)	wiòno (<i>Inf.</i>)
cultivate, plough	bahé (imp.)	bàhn t'hiòno (<i>Inf.</i>)
give	dé	dé (<i>Inf.</i> diòno)
see	zi	pàshé
look	skyé	tṛakié
towards	lokh-skyé	
downwards	kà-skyé) <i>ko</i> = down.	
	<i>Astori</i>	
upwards	huñ-skyé (<i>hunn</i> = above. <i>Astori</i>)	
lost	nut	noto
come (imp.)	yé	é (<i>wolo</i> K.)
came	ùlla	àlo
rise	ōté	uté
dig	akū	okoé
I speak	razuñs	ràzem
one	ek	ek
two	dü	du
three	trà	tṛé
four	chorr	châr
five	puñsh	poñsh
six	shà	shà
seven	sât	sât
eight	aṛt	àrt
nine	nü	nâu
ten	dàsh	dàis
eleven	kudish	akâi
twelve	budish	buâi
thirteen	tröbish	tṛöñi (tṛo'i)
fourteen	chudish	chodéi

<i>English.</i>	<i>Dāh-Hanu.</i>	<i>Drās.</i>
fifteen	pāndish	pazileñ
sixteen	shōbish	shoñi (sho'i)
seventeen	satuñish	satāi
eighteen	aṭuñish	aṭāi
nineteen	kūnjā (? for ek-ün- bizā 20-1	kuni (? for ek-un-bi) (20-1)*
twenty	bizā	bī
twenty-one	bizā-ek	bī-ek
thirty	bizé-dāsh (20 + 10)	ṭri
forty	du-buṣu (2 × 20)	dū-bio (2 × 20)
fifty	du-buṣu-dāsh (2 × 20 + 10)	dūbio ga dāi (2 × 20 + 10)
sixty	tra-buṣu (3 × 20)	ṭré-bio (3 × 20)
seventy	tra-buṣu-dāsh	ṭré-bio ga dāi
eighty	chār-buṣu	chār-bio
ninety	chār-buṣu-dāsh	chār-bio ga dāi
hundred	sho	shāl

On Representations of Foreigners in the Ajantā Frescoes.—By

RAJENDRALĀLA MITRA, LL. D., C.I.E.

(With 4 plates.)

The Ajantā Pass first came to the notice of Europeans during the great battle of Āśāyi, which broke down the Marhattā power; but the caves near it were not visited by any Englishman until several years afterwards. According to Mr. Burgess, some officers of the Madras army were the first to visit them in 1819, and Col. Morgan of the Madras army wrote a short notice of them, which appeared in Mr. Erskine's 'Remains of the Buddhists in India.' Then followed Lieut. J. E. Alexander in 1824, and his account was published by the Royal Asiatic Society in 1829.† Dr. Bird visited the place by order of Sir John Malcolm in 1828, at the same time when Capt. Grisley and Lieut. Ralp were at the place. The account of the former appeared in his "Researches into the Cave Temples of Western India," a meagre and faulty account, utterly untrustworthy for all historical purposes. The description of the latter appeared in this Journal.‡ It is graphic and en-

* These seem to retain a trace (*k* for *ek*) of the deducted unit itself, which Sanskrit had lost (cf. *ānavinsati*), but of which Pāli seems to show the original presence, (*ekūnavīsati*).

† Transactions Rl. As. Soc., I, p. 557.

‡ Ante V.

thusiastic, but calculated more to rouse than to allay the curiosity of the reader. Mr. Burgess says, "A somewhat interesting and correct topographical account of them, was subsequently (1839) published in the "Bombay Courier", and republished in a pamphlet form, but I have not seen the brochure. Soon after, came out Mr. Fergusson's description in his Memoir on the "Rock-cut Temples of India," (1843) and laid the foundation of a critical study of these remarkable works of art. It drew to them the attention of the Court of Directors, and Capt. Gill was, six or seven years after, deputed to prepare facsimile drawings of the fresco paintings which adorn most of the caves. His report was published in 1855, but it was meagre, like the works of his predecessors, and subserved, like them, only to whet the desire for further information. Dr. Wilson's account, in his paper on the "Ancient Remains of Western India", published in 1850, in the Journal of the Bombay Asiatic Society*, is a mere resumé of what was then known, and Dr. John Muir's subsequent notice professes to give nothing more than a foretaste of what may be seen at the place. Dr. Bhau Dájí came to Ajantā in 1865, and took facsimiles of most of the inscriptions, some of which had been previously noticed by James Prinsep, and published translations of them in the Bombay Journal.† The translations are generally correct and of great value, but the general remarks on the nature of the caves and their ornaments are brief and not always satisfactory. The learned gentleman had the intention of writing a separate paper on the subject, but his untimely and lamented death prevented his carrying out the intention. Since his death several notices have appeared in the 'Indian Antiquary' which are highly interesting, but none of them is exhaustive.

When Major Gill's copies of these curious works of art were sent to Europe, it was expected that antiquarians in England would take them in hand, and submit to the public a full and comprehensive critical account of their character, and the subjects they portray. But the copies were destroyed by fire in the Sydenham Crystal Palace, and nothing came of them. In the meantime the originals suffered greatly from leakage in the caves and want of care, and it was apprehended that in a few years more they would be totally lost. A representation was accordingly made to Government to adopt some measures for their preservation. Thereupon a party of draftsmen, under the superintendence of Mr. Griffiths, Principal of the Art School at Bombay, was deputed in 1872-73 to prepare copies of all the printings which were still legible. The result was a "collection of excellent copies of four large wall-paintings covering 122 square feet of canvas, 160 panels of ceiling, aggregating about 280 square feet, 16 moulds from the sculptures, and several drawings." In reporting on these Mr. Griffiths says :

* Vol. III, pp. 71ff.

† Vol. VII.

"The artists who painted them, were giants in execution. Even on the vertical sides of the walls some of the lines which were drawn with one sweep of the brush struck me as being very wonderful; but when I saw long delicate curves drawn without faltering with equal precision upon the horizontal surface of a ceiling, where the difficulty of execution is increased a thousand-fold, it appeared to me nothing less than miraculous. One of the students, when hoisted up on the scaffolding, tracing his first panel on the ceiling, naturally remarked that some of the work looked like a child's work; little thinking that what appeared to him up there as rough and meaningless, had been laid in by a cunning hand, so that when seen at its right distance, every touch fell into its proper place.

"The condition of mind in which these paintings at Ajantā were originated and executed must have been very similar to that which produced the early Italian paintings of the fourteenth century, as we find much that is in common. Little attention paid to the science of art, a general crowding of figures into a subject, regard being had more to the truthful rendering of a story than to a beautiful rendering of it; not that they discarded beauty, but they did not make it the primary motive of representation. There is a want of aerial perspective—the parts are delicately shaded, not forced by light and shade, giving the whole a look of flatness—a quality to be desired in mural decoration.

"Whoever were the authors of these paintings, they must have constantly mixed with the world. Scenes of every-day life, such as preparing food, carrying water, buying and selling, processions, hunting-scenes, elephant-fights, men and women engaged in singing, dancing, and playing on musical instruments, are most gracefully depicted upon these walls; and they could only have been done by men who were constant spectators of such scenes, by men of keen observation and retentive memories. * * * *

In every example that has come under my observation, the action of the hands is admirable and unmistakeable in conveying the particular expression the artist intended."*

Adverting to the second picture he says: "Parts of this picture are admirably executed. In addition to the natural grace and ease with which she is standing, the drawing of the woman holding a casket in one hand, and a jewel with a string of pearls hanging from it in the other, is most delicately and truly rendered. The same applies to the woman seated on the ground in the left hand corner. The upward gaze and sweet expression of the mouth are beautifully given. The left hand of the same woman...is drawn with great subtlety and tenderness."† "The third picture", he remarks, "contains eight figures and portions of three others, all of which are seated or standing upon large lotus flowers with nimbi round the heads. The

* Indian Antiquary, III. 26.

† Ibid., loc. cit.

action of some of the figures, especially the standing ones, bears such a very striking resemblance to what is characteristic of the figures in Christian art, that they might have been taken from some mediæval Church, rather than from the caves of Ajantâ. The delicate foliage which fills in the spaces between the figures will give some idea of the power of these old artists as designers, and also of their knowledge of the growth of plants."*

Referring to a picture in cave No. 16 he observes: "This picture, I consider, cannot be surpassed in the history of art. The Florentine could have put better drawing and the Venetian better colour, but neither could have thrown greater expression into it. The dying woman, with drooping head, half-closed eyes, and languid limbs, reclines on a bed the like of which may be found in any native house of the present day. She is tenderly supported by a female attendant, whilst another, with eager gaze, is looking into her face, and holding the sick woman's arms, as if in the act of feeling her pulse. The expression on her face is one of deep anxiety, as she seems to realize how soon life will be extinct in one she loves. Another female behind is in attendance with a *pankâ*, whilst two men on the left are looking on with the expression of profound grief depicted in their faces. Below are seated on the floor other relations, who appear to have given up all hope, and to have begun their days of mourning,—for one woman has buried her face in her hands, and, apparently, is weeping bitterly."†

And he sums up the value of the whole by saying—"For the purposes of art-education, no better examples could be placed before an Indian art-student than those to be found in the caves of Ajantâ. Here we have art with life in it, human faces full of expression,—limbs drawn with grace and action, flowers which bloom, birds which soar, and beasts that spring, or fight, or patiently carry burdens: all are taken from Nature's book—growing after her pattern, and in this respect differing entirely from Muhammadan art, which is unreal, unnatural, and therefore incapable of development."‡

It is to be regretted, however, that as yet no attempt has been made to secure for the public a detailed, descriptive, critical and historical account of these relics. At one time a proposition was made to place the drawings at the disposal of Mr. Fergusson for the purpose; but, I believe, it has since fallen through.

The Government of India has, however, in the meantime, caused photographic impressions to be taken of Mr. Griffiths' drawings, and copies thereof sent to Societies interested in Indian Archæology. Three batches of these photographs have, from time to time, been received by the Asiatic Society of Bengal, and they fully bear out Mr. Griffiths' remarks regarding their value.

* Loc. cit., p. 27.

† Ibid., p. 27.

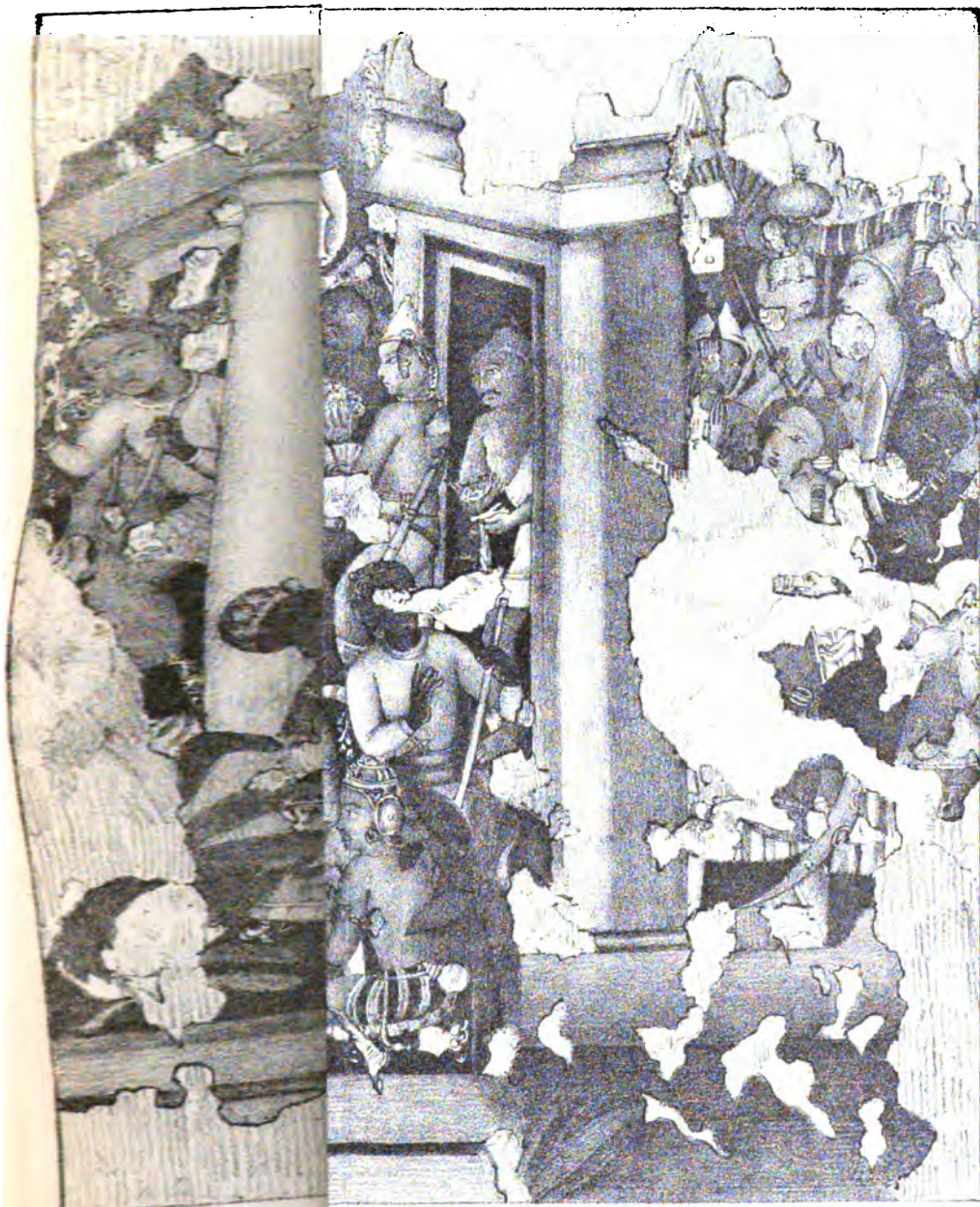
‡ Ibid., p. 28.

A large number of the photographs represent architectural details and floral scrolls of much importance as illustrations of ancient art-designs in this country, and are well worthy of careful study. There are others representing scenes in the legendary life of Buddha, which are of considerable value in connexion with the antiquity of the legends which they illustrate. While a few depict scenes from private life, or state pageantry, which afford interesting details regarding the manners, customs, habits, social condition, and intercourse of foreigners with the people of Western India, two thousand years ago.

Messrs. Ralph and Grisley were the first to notice the existence of foreigners in these frescoes. In their animated and scenic correspondence, mention is repeatedly made of foreigners as distinct from the natives. In one place they say: "Here is a lovely face, a Madonna face. What eyes! She looks towards the moon. Observe, these are Hindu faces—nothing foreign."* Elsewhere, "Observe that Abyssinian black prince seated on a bed—remark his ornaments. Now the woman seated on his left knee whom he embraces is as fair as you or I. Did these fellows get Georgian slaves?" Again: "Here are evidently three beauties in this apartment—one an African, one copper-coloured, one of a *European* complexion. Yes; and how frequently we see these intermixed. See this, R. is a fair man, a eunuch." Again, "How often we see people of three complexions in the same panel! Now this is the most extraordinary thing we have found. Here are three placid portraits—they are *Chinese*. Nothing can be plainer;—observe the style of their hair;—the women have locks brought down in ringlets over their faces, and falling on to the neck, like some of the Hampton Court beauties." The writers did not, however, attempt to define the character of these foreigners, in any detail. It will not be uninteresting, therefore, to examine at length the peculiarities of a few of the figures shown in the photographs.

The first picture I have to notice is a court-scene on the south side of the cave No. I. In Messrs. Ralph and Grisley's paper it is thus described: "Here is a fair man of full age, dressed in a robe and cap, like some monk or abbot. Here is, next to him, a half-naked Brahman, copper-coloured, with shaven crown, and the single lock on his head. Here is a man presenting him with a scroll on which *something is written*. He is in a crowded court,—he has come to an audience." In the original this picture measures 15' x 6'-6". (Plate II.) It represents a large audience chamber with colonnaded side aisles, and a large portal in front. The room is carpeted with some stuff bearing sprigs on a black, or dark-coloured, ground. On the centre is a *charpai* or bedstead, which serves the purpose of a throne. It has four feet of the ordinary modern make, with a tape-woven top, such as is to be met with in every decently furnished house in northern India in the present day. Over it is a mattress of striped cloth, and on the off side a large pillow or *takia*, having behind

* *Ante*, Vol. V, p. 558.



S. Sedgfield Lith.

JANTÁ).

it an ornamented head-piece shaped like a corona. A king or chief is seated, squatting on this throne in the usual oriental style, dressed in a flowing *dhuti* or body-cloth, a *chadar* tied round the waist, and a tunic of some kind whose character is not apparent. He wears a rich heavy crown, bracelets and necklaces, one of the last being worn athwart the chest, very like a Bráhmānical cord. The face and parts of the arms and chest are destroyed or smudged over. In front of the throne there is a man seated, holding an ox-tail *chauri*, and having in front of him a curious ornament, shaped like a cornucopia. To the right there are four other persons seated on the ground, one of them having in front a tray placed on a tripod stand. The pose of the person is like that of a Bráhmaṇ engaged in worship. Behind and on the two sides of the throne, there are several persons,—officers of state, courtiers, body-guard, and menials,—standing in different attitudes, some dressed in *dhuti* only, others with tunics or made dresses, the character of which, owing to the smudgy condition of the picture, cannot be satisfactorily made out, except in one case in which a pair of close-fitting trousers and a *chapkan* are unmistakable. Some are armed with clubs, and one, near the entrance to the hall, upholds a standard. Their shaven chin, oriental head-dress, dark complexion, and characteristic features leave no doubt in my mind that they are all Indians. Among them there are four females, one standing behind the throne, and three seated on the carpet on the left side. In marked contrast to these are three persons standing in front of the king, and four others at a little distance. The foremost among them has a sugar-loaf-shaped hat with a black band, a large flowing gown of white stuff, a striped jacket, and a dagger held in a cloth girdle. The lower part of the gown or long coat is partially covered by the figure of the Bráhmaṇ engaged in worship, but from the portion which is visible, it is evident that it extended below the middle of the leg. Between the girdle and the lower edge of the jacket there is a waist-band buckled in front. Round his neck there is a necklace with a large locket. He is in the attitude of making a courtesy to the king, with his right hand passed under the jacket and placed on the left breast, and the left holding out a folded letter. The second person, dressed in the same style, but with a black jacket, is standing with folded hands in token of respect. His hat has no band. The third has a Persian helmet, with a crescent on top and a rosette on one side. He is bearing a tray full of presents of some kind. At a little distance from the last, just entering the hall, there is another person of the same nationality, bearing a tray, and outside the door there are two or three others who are evidently servants of the persons who have entered the hall, and belonging to the same nationality. The lower part of the gowns of these is not visible, but it must be the same as in the case

of the foremost figure. The coat of the man with a helmet is probably short.

The complexion of these persons, except the first, is markedly fair. Studying the group carefully the conclusion appears inevitable that it represents an embassy from a foreign country. The foremost person is the ambassador, who is presenting his credentials in open court to the Indian potentate. Behind him is his secretary, and then follow the bearers of the *nazr* or presents from the foreign court.

But whence is this embassy? and what is the nationality of the persons who compose it? We are aware of no Indian race or tribe which differed so materially and markedly in complexion, features, and dress from the natives of the country as represented in the court. From beyond India on the north and the east, there was no nation which, two thousand years ago, could have presented such a group. We must look to the North-West, therefore, for the birth-place of the ambassador and his suite. Now on that side we had the Afghans, the Bactrians, the Scythians, and the Persians. But the Afghans never had the peculiar sugar-loaf hat, nor the flowing gown, nor the crescented helmet. Their features too, were, as shall be presently shown, coarser and ruder. The Bactrian and the Scythian dresses, to judge from numismatic evidence—the only evidence available in the case,—were also different. The coat was short, the trousers tight-fitting, and the head-gear very unlike a sugar-loaf hat. The Persian dress, however, as we now have it, is the exact counterpart of what appears in the picture. The hat, the gown and the jacket are identically the same.

The helmet appears repeatedly in the sculptures of Khorsábád and Nineveh, and the features and the beard are in no way different. We may, therefore, safely conclude that the picture represents a group of Persians, either merchants, or an embassy from Persia to an Indian court, probably the latter, as the letter in the hand of the foremost person would be redundant in a merchant. I am not aware of any mention of such an embassy in Buddhist religious history; but I have read but a small portion of Buddhist literature, and as it is abundantly evident that the frescoes of Ajantá were not confined to representations of religious history, it is not necessary to hunt up any relationship with it of Buddhist legends. Nor is it material to know whether the representation is historical or an ideal one. In either case it shows that the Indians of old had free intercourse with the Persians, and were thoroughly familiar with their features and dress. Literary evidence on this subject may be had in abundance in Sanskrit literature, but it is not necessary to adduce it here.

The second scene I have to describe is a domestic one, and three editions of it occur in the collection of photographs before me. There is no indication, however, to show whence they have been taken. The scales attached

100







FIG:1 BACTRIAN ✓

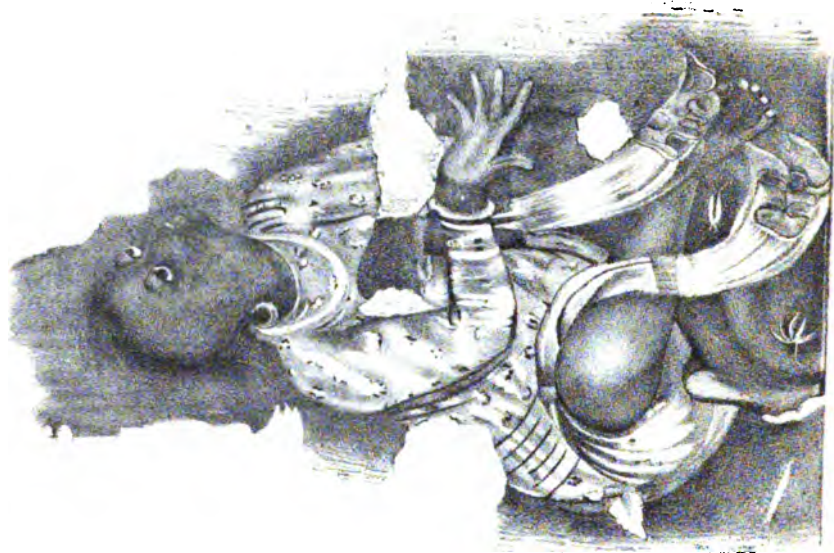


FIG:2. INDIAN.

show them to be of large size, about 30 × 28 ft. In its simplest version (Plate III) it represents a divan placed in front of a cloth screen, and covered with cushions and a check pattern coverlet; and on it are seated a big, stout, burly-looking man and a lady by his side. The man is seated cross-legged, and is in an amatory mood, perhaps somewhat befuddled with wine. His face is heavy and square, and he has both a beard and a moustache. He wears long hair covered by a thick conical cap with a turban, or a fur band around it like the Qilpáq cap of the Central Asiatic races of the present day. On his body is a coat or tunic reaching to the knee and trimmed with, what appears to me, patch-work decorations; knee-breeches and striped stockings complete his dress. He holds a cup in his left hand, and before him, on the ground, in front of the divan, there is a covered tray. The lady beside him has a gown reaching to the knee, a shell-jacket, (both set off with patch-work trimmings,) and a pair of striped stockings. She has a skull cap on her head, and earrings. Her right hand is lifted as in the act of telling something interesting to her lord. To the right of the man, in front of the divan, there stands a maid, arrayed in a long flowing gown which leaves only the tips of her shoes visible, and holding a flagon, shaped like a soda-water bottle with a long narrow neck, ready to replenish the cup of her lord. Behind the mistress there is a second maid with a wide-mouthed covered jar in her hand.

In the second version the man holds the cup in his right hand, and a stick or straight sword in his left. He has also an elaborately-worked belt, and the trimmings of the coats and gowns are of different patterns. The lady leans on the shoulder of her lord by her right hand, and by her attitude expresses great solicitude to please him. There is also a third maid, squatting in front, and ready to serve out edibles from the covered tray beside her.

The third version is even more developed. (Plate IV). The screen behind the divan is set off with floral designs. The coat of the hero and the gown of his lady, and also that of her maid, are set off with triangular striped streamers flying from the back. The features of the lady are vivid with life, and the expression of endearment on her face is truly admirable. The second maid holds a *surihi* or goglet instead of a jar. The lady has, instead of a cap, a fillet round her head with an aigrette in front, and the maids similar fillets, but without the jewel. The third maid is replaced by two bearded, thick-lipped Negro-looking servants who are serving out dishes from the covered tray. The stockings in the last two versions are white. In two small panels the male figure is reproduced in company with another male,—two jovial companions, engaged in pledging their faith to each other over a cup of liquor. (See Plate V, fig. 1). The striped stockings are distinctly seen in these, as also a pair of check-pattern trousers, not striped.

There are more than five hundred representations of Indian men and women in the photographs, but they appear totally unlike the human figures shown in these plates, and, bearing in mind the fact that the artists of these frescoes were most faithful in delineating the peculiarities of their subjects, it is impossible to deny that they took their models for these from other than Indians. It is difficult, however, to determine what nationality they had in view. The features, the cap and the turban of the principal figure, are the exact counterparts of what may be every day seen in the Kabulese fruit-sellers in the streets of Calcutta; but the coat is different. I have never seen an Afghan woman in her native dress, but the gown and the jacket of the female figures appear very like those of Jewesses. The patch-work trimmings are peculiar to them, and the best specimens of the kind of work I have seen are of Jewish make. The Afghans, however, are in no way inferior in this art: they bring to Calcutta every year a number of rugs and other articles of patch-work, which are remarkably beautiful. Knowing how such domestic arts as needle-work and patch-work are perpetuated for generations, and looking at the complexion, the cap and the turban, I was first disposed to believe that the figures on these plates represented Afghans, the thick-lipped servants being Negroes.

In the Zodiac Cave (No. XVI) Dr. Bhau Dáji found an inscription which once "contained the names of seven or eight kings of the Vákátaka dynasty, but only that of Vindhyaśakti, the oldest and most eminent, was preserved intact." "By a strange fatality," says the writer, "the inscription has been obliterated wherever a royal name existed, so that one is tempted to suppose that the destruction was intentional. But," he adds, "the destructive influence of the rainy weather is sufficient to account for the gaps."* The name of this Vindhyaśakti's country is mentioned in the Seoni copper-plate; but the chief himself is not named there. Dr. Bhau Dáji identifies this Vindhyaśakti with a chief of the Kailakila Yavanas who, according to the Vishṇu Purāṇa, once ruled in India. Having advanced thus far, he takes Kailakila to be identical with an ancient city and citadel named Ghúlghúleh near Bámián, mentioned by Mr. Masson in his paper on the Antiquities of Bamian (*ante*, v. 708), and Vákátaka with Bactria, thereby suggesting, though not positively asserting, that the Bactrian Greeks were the authors of the Ajantá caves. If this reasoning be admitted, the figures we have shown would be those of Bactrian Greeks. But there are various difficulties to overcome before we can accept the identification. The name Vindhyaśakti is too thorough a Sanskrit word to be the name of a Bactrian Greek, and there is nothing to connect him with the princes of the Seoni plate, except the word Vákátaka, which, as given in the Seoni plate, is

* Journal, Bombay As. Soc., VII, p. 65.

unmistakably the name of an Indian, and not of a trans-Indian locality, particularly Bactrian, for which the usual and very extensively-employed term is Válhika. In the Puráṇas these Válhikas are said to have reigned after Vindhyaśakti. Denying, however, the accuracy of the identification of Vákátaka with Bactria and of Vindhyaśakti having been a Bactrian, it might still be said that the figures under notice are Bactrians. In some Kenerki coins the cap is conical, and surrounded by a turban or a band of fur like the Qilpáq cap; the cut of the coat is of the same style, and the close-fitting trousers and stockings are, as far as can be made out in coins, the same. The coarse square face of the Mongolian type is particularly remarkable, and, as the Bactrians exercised supremacy for some time in India from a little before the commencement of the Christian era, to nearly a century after it, it would be much more reasonable to suppose the representations to be of Bactrians, rather than those of Afghans, who attained to no political distinction at the time, and were to some extent included among the Hindus.

The stockings of the peculiar pattern which has hitherto been thought to be the outcome of modern European art, are remarkable: I have noticed them nowhere else in Indian paintings or sculpture. The Hindus seem to have borrowed the stockings from their neighbours; for in a panel in Cave No. I, there is a representation of an Indian bacchanalian scene, unmistakable from the features and dress, in which they have been reproduced on the legs of a man and his lady-love. Before the importation of stockings from Europe, the Indians got their supplies from Káshmir. I do not, however, know when knitted stockings were first introduced into that country. To England they first came in the reign of Henry VIII, and it is extremely doubtful if they were of much more ancient date in Káshmir. And after all what I take to be stockings might be sewed hose of cloth or milled stuff of some kind.

The indulgence in spirituous drinks was common all over India, Bactria and Persia in ancient times, and the evidence of it in the frescoes does not call for any notice.* That the cup and the flagon indicate something more potent than sherbet, I believe, none will question.

The curtains behind the divan suggest the idea that the sites of the Bactrian domestic scenes were tents, and that the people shown had not become settled inhabitants of the country. But the evidence in this respect is too meagre to attach any importance to such an idea.

Looking to the made-dresses of the Persians and the Bactrians, it might be supposed that the Indians got theirs from those sources; but, as I have shown in my "Antiquities of Orissa," such was not the case, at least when the Ajantá frescoes were painted. In the Indian bacchanalian scene above noticed, the dresses of the Indian man and woman are quite different, and

* *Vide passim* my paper on 'Spirituous Drinks in Ancient India,' *ante*, XLII, pp. 1 ff.

by no means such as to justify the assumption that they had been designed from foreign models. In the very affecting picture of the death of a lady of rank in Cave No. XVI, the bodices shown on some of the maid-servants engaged in grinding corn in hand-mills, are quite unlike the jackets of the Bactrian women.

In an Indian scene in Cave No. I, where a large number of sable beauties are exhibited, there is a figure seated cross-legged, whose dark features, punchy belly and style of sitting, leave no doubt in my mind of his nationality; and he is dressed in a *dhuti* which leaves a part of his thigh exposed, and a *mírzáí* of flowered muslin which is thoroughly Indian, and the like of it has nowhere been seen out of India. (See plate V, fig. 2.) The *mírzáí* is in use by the Hindus to this day all over northern India, and its make seems not to have changed in the least since the time of the fresco.

It is not my intention to enter into a discussion here as to the date of the Ajantá Caves. The late Dr. Wilson of Bombay took them to extend from the third or second century before, to the fifth or sixth century after, Christ.* Mr. Burgess, after a careful study of the Caves, states "that the oldest of them cannot be later than the second century before the Christian era." Long before him Mr. Fergusson came to the same conclusion in his 'Rock-cut Caves of India,' and in his 'History of Eastern Architecture' remarked that Cave No. XII, "the façade of which so much resembles that of the Násik Chaitya (B. C. 129), cannot be far off in date" (p. 122). The latest are supposed to be of the 5th or 6th century. Accepting this opinion for my guide, and there is not much to show that it is untenable, and bearing in mind that Cave No. I is one of the largest and richest in paintings which long preceded sculpture, I may fairly come to the conclusion that the scenes I have described above represent phases of Indian life from eighteen hundred to two thousand years ago.

* Journal, Bombay As. Soc., III, p. 73.

वधुमसि। ऊययो जायवा वधुमसि विमेषमशिशो ४ तः।
 इमोनेयसो विविजमम। जिह्नुजमश। त्तिविजयश
 आगियारुपवनेसुपसीको। त्तिवक्ष्देयपापान्था
 वृद्धम्। देयपापान्थाते पुनममद्वानकमहयाजा
 तिसीपभेदमवक्ष्देयो विजयश। अपषड्विषमरुप्रताप
 सिपालमनेविकेलयिवक। तिव्वलीकृतेनतल। स्रुडलि
 मीनमधीननमाश। पयति। अमुपुमविलिनमवोपास
 डिजोलसाहसप्रयद्यो। एषस्याडुलिनमम। ग्रामनदृष्ट
 एकुवलो। कुडनेवेजोलीमासदृका। पववउनाघाटवि
 आसाधरुडा। नेनने। पयद्वत्रमानतिः। एषाहामा
 तन्त्रतमेसवचनेमादेमासिमुक्तपुस्तलिमाहामोषपा
 रुमा। वीडेनादीयते। अतास्मनयानीपतिवास्यम
 सनेयमा। शिवनेम। हजोमोदातामनाह। अगिभमा
 पातलमश्रीणे। अल्लासकुशलनासूतेनत्तोडकेन
 अंशवोडनेतिमवारुपतिना। हायुग। विषयेकृतोपा
 आसतधा। मने। कुकूप्याप्रअंजितमगाअक्षकाडि
 तमवक्ष्देयपापान्थाते पुनममद्वानकमहयाजा
 तिसीपभेदमवक्ष्देयो विजयश। अपषड्विषमरुप्रताप
 सिपालमनेविकेलयिवक। तिव्वलीकृतेनतल। स्रुडलि
 मीनमधीननमाश। पयति। अमुपुमविलिनमवोपास
 डिजोलसाहसप्रयद्यो। एषस्याडुलिनमम। ग्रामनदृष्ट
 एकुवलो। कुडनेवेजोलीमासदृका। पववउनाघाटवि
 आसाधरुडा। नेनने। पयद्वत्रमानतिः। एषाहामा
 तन्त्रतमेसवचनेमादेमासिमुक्तपुस्तलिमाहामोषपा
 रुमा। वीडेनादीयते। अतास्मनयानीपतिवास्यम
 सनेयमा। शिवनेम। हजोमोदातामनाह। अगिभमा
 पातलमश्रीणे। अल्लासकुशलनासूतेनत्तोडकेन
 अंशवोडनेतिमवारुपतिना। हायुग। विषयेकृतोपा

Photoincographed at the Surveyor General's Office Calcutta.

A COPPER PLATE GRANT FROM BANDAH.

(Samvat 1190, or A. D. 1135.)

*A Copper-plate Grant from Bandá.—By RĀJENDRALĀLA
MITRA, LL.D., C.I.E.*

(With a plate.)

The Society is indebted to Mr. A. Cadell, Asst. Magistrate, Bandá, in the N. W. Provinces, for the sight of a Copper-plate found in Parganah Augási of the Bandá district. The plate measures 16½ inches by 10½, and is in an excellent state of preservation. (See plate VI.) It is a hammered one; very rough on the outer face, but moderately smooth on the inscribed side. Round its edges slips of metal have been very roughly and clumsily rivetted on to form a raised rim for the purpose of preventing the inscription from being easily rubbed off. At the middle of the lower edge, close by the rim, is a round hole, half an inch in diameter. It was intended for a ring which bore the seal of the donor, and perhaps also held together two plates, one of which is missing. If a second plate did once exist, it was intended only as a cover for the first and bore no inscription, for the latter contains the whole of a deed of conveyance, with a colophon giving the name of the writer and engraver of the record, and hitherto no document of the kind has been found which contains any thing after the name of the engraver. The record is inscribed longitudinally, and comprises nineteen lines, the first four of which have a break in the middle, caused by an outline figure of the goddess Rājalakshmi with two elephants standing on expanded lotuses, and pouring water on her head. The writing is of the Kuṭila type, but slender in body, and verging to the modern Nāgari character. It records the grant of 'ten ploughs' of land in the village of Ramuraḍá, which is situated in the circle of Sudáli, to a Bráhmaṇa named Gabhanta S'arman, the son of Jáṭa, the grandson of Sátti, and great-grandson of Vapana, a member of the Vájasaneyi school of the Bháradvája gotra, having the threefold Pravara of Bharadvāja, Āngirasa, Várhaspatya, and an inhabitant of the village of Dhakari. The boundary of the plot is given in detail, and the date of the gift was Monday, the 5th of the waxing moon in the month of Māgha, Samvat 1190 = A. C. 1135.

The donor was Madanavarma Deva, a devout follower of Śiva. His immediate predecessor was Prithvīvarma Deva, who had succeeded Kirtivarma Deva.

The first monument of this line of princes was brought to the notice of the Society by Lieutenant William Price, in 1813. It was a large inscribed stone found on a rocky hill in the vicinity of the town of Mau, about ten miles from Chhattarpur. The record was in a bad state of preservation, and the transcript and translation of it published in the 'Asiatic Researches'*

* Vol. XII, pp. 359 *et seq.*

are full of lacunæ. It comprises the history of nine princes with the names of their ministers.

The second record was found by Capt. T. S. Burt in 1838. It too was an inscribed slab, which had been detached from one of several temples at Khajráha, nine *kos* from Chhattarpur, which is on the high road from Saiyar and Hamírpur, close by the fortified town of Rájgarh, on the right bank of the Kám river, S. W. from Chhattarpur. It gives the names of six predecessors of Dhánga.*

The third was communicated to me by Major-General Cunningham, who found it at Khajráha.† It was a short record of 13 lines, but it was of value in settling the date of the dynasty on a sure footing. In commenting upon it I pointed out the relation it bore to the two preceding monuments, and the results deducible from a reading of the three inscriptions together. The conclusion I then arrived at regarding the date of Madanavarma, the last prince of the line, was, that he must have lived about the middle of the twelfth century. The exact date given by the copper-plate now under notice is Samvat 1190 = A. D. 1135. The name of the immediate predecessor of Prithivivarma, the father of Madana, in Lieutenant Price's inscription, is Sallakshanavarma; but this appears to be an *alias* or title, the real name being Kirtivarma in the copper-plate. Putting the names found in the four inscriptions together with such corrections as the several records have helped me to make, I arrive at the following genealogy. Altogether we have sixteen names. Of these, documentary evidence exists for the dates of three; the 7th king, Dhánga, being assigned by two records to Samvat 1011 and 1019 respectively; the 13th by one to Samvat 1173; and the 16th by another to 1190. For the rest we have to depend upon averages. For reasons assigned in my paper on the Khajráha inscriptions, the earlier reigns may be taken to have been long, but some of the later must have been very short. Dhánga is said to have lived 109 summers, and then to have resigned his life at the confluence of the Yamuná and the Ganges, and this led Mr. Sutherland and those who wrote after him to suppose that the prince had committed suicide. Such is, however, not the inevitable meaning of the passage. To this day the ordinary civil way of announcing a death is to say, so-and-so has surrendered his life to the holy river so-and-so or the sacred pool (*Kshetra*) so-and-so, and the inscription has probably adopted the same mode of expression.

I.	Nannuka, of the Chandrártreya race A. D.,	746	771
II.	Vágyati or Vákpati, son of I,	771	798
III.	Víyaya, son of II,	898	823
IV.	Váhila or Ráhila, son of III,	823	848

* Journal, As. Soc., VIII, p. 159.

† Ibid., XXXII, pp. 273f.

V.	Sriharsha, son of IV,.....	848	873
VI.	Yasodharma, son of V, by Kankuṭá,	873	900
VII.	Dhánga, { son of VI, by Narmadevi, Minister } { —Prabhása,	900	962
VIII.	Gaṇḍa Deva, Minister—Prabhása,	952	988
IX.	Vidyádharma Deva, Minister—Sivanáma, son of last,	983	1103
X.	Viyayyapála, Minister—Mahipála, son of last, ...	1103	1023
XI.	Kirtivarma Deva, Minister—Ananta,	1024	1045
XII.	Varma Deva, Minister—Yogeśvara, son of last,...	1045	1065
XIII.	Jayavarma Deva, Minister—ditto,.....	1110	1120
XIV.	Kirtivarma Deva <i>alias</i> Sallakshana, Minister— Vatsa and other sons of Ananta,.....	1120	1130
XV.	Prithvivarma Deva, ditto,.....	1120	1130
XVI.	Madanavarma Deva, Minister—Gadádharma,.....	1130	1150

The annexed translation of the record has been prepared for me by my young friend Bábu Durgáráma Basu, Pleader, High Court of Calcutta.

Translation of an inscription from Parganah Augási, Búndá.

May this be auspicious!

The dynasty of the kings of the lunar race, glorious as the moon on the forehead of the god of the universe, (Viśveśvara) gladdening the universe, prospers. In that noble and flourishing dynasty, rendered resplendent by heroes like Jayasakti and Vijayasakti, the king of Kálanjara, the fortunate Madanavarma Deva, the highly revered, the great king over great kings, the supreme lord, the devout worshipper of Śiva, successor of the highly revered, the great king over great kings, the supreme lord, the fortunate Prithvivarma Deva, *who was* the successor of the highly revered, the great king over great kings, the supreme lord, the fortunate Kirtivarma Deva, reigns supreme. He, having subdued his enemies by his irresistible majesty, untroubled holds the earth like a married wife, and thereby keeps his intellect unclouded, and his conscience unsullied. He commands all his relatives, Káyasthas, and other great men inhabiting the village of Rámuraḍá within the district of Sudáli:—"Be it known unto you that, on Monday, on the day of the full moon, in the month of Mágha, of the Samvat year eleven hundred and ninety (in figures 15th Sudi, Magh, Samvat 1190) I have, after having duly bathed in holy water, after offering oblations to the gods, having worshipped the sun and the lord of Bhavání (Śiva) and after offering oblations to the fire, for the promotion of virtue of my parents and of myself, with water held in my hand and consecrated with kuśa grass, and having pronounced the word Svasti (let this be auspicious), bestowed, for the period of the duration of the sun and the moon, on the Bráhmaṇa Gabhanta Sarmá, son of Játa, grandson of Sátti, great-grandson of Bápan, of the Vájasaneyá branch (*Sákhá*) of the Bharadvája gotra having Bharadvája, An-

girasa and Várhaspatya for his threefold *Prabara*, an inhabitant of the village of Dhakari, making the gift descendable to his sons, grandsons and successive descendants, ten ploughs of land (in figures 10 ploughs) in the above named village, the said land requiring seven and a half *dronas* of seed for cultivation, and bounded on the east by the boundary post of the village of Ranamusra, on the south by the post of the village of Ramasaida, on the west by the tope of Madhuka trees, and on the north by the post of the village of Bijauli: the sacred lands thus bounded with fields of *jádyā** and lands and water comprised therein, and with right to make all present, past, and future collections from debtors. Knowing this, you should render unto him, in compliance with my orders, shares, usufructs and all other dues. No one must make any opposition to his enjoying these lands with all duties and all *Āsavas*, sugarcane, cotton, saffron, flax, mango, Madhuka (*mowá*) and other trees, as well as salt mines, and with all other things within the boundary, whether above or below the soil, and whether he enjoys the lands by himself cultivating them, or getting them cultivated by others, and whether he makes a gift of, or mortgages, or sells, them. This grant is irrevocable and interminable, and it should be so preserved by future sovereigns. Thus has it been said: 'This earth has been enjoyed by many kings including Sagara and others. To whomsoever belongs the earth for the time being, to him is due the fruit (of such gifts).' Written by Súdha, the clerk of the edict department, and inscribed by the well-connected Jalpana."

Transcript of an inscription from Parganah Augási, Bandá.

- १ । खस्ति । जयत्वाकादयन्विश्वं विश्वेश्वरशिरोष्ठः । चन्द्रान्वयनरेन्द्रायां वंश-
खन्त्र इवोञ्ज्वलः ॥ तत्र प्रव-
- २ । र्द्धमाने विशोभिः विजयभ्राजिष्णुजयशक्तिविजयशक्त्यादिवीराविर्भावभास्वरे
परमभट्टारकमहारा-
- ३ । जाधिराजपरमेश्वरश्रीकीर्तिवर्मदेवपादानुध्यातपरमभट्टारकमहाराजाधि-
राजपरमेश्वरश्रीष्ट-
- ४ । श्रीवर्मदेवपादानुध्यातपरमभट्टारकमहाराजाधिराजपरमेश्वरपरममाहेश्व-
रकालञ्जराधिय-
- ५ । तिः श्रीयुत्तमदत्तः † वर्मदेवो विजयी ॥ स एष दुर्लभहृतरप्रतापतापितसकल-
रिपुकुलः कुलवधूमिव वसुन्धरां निराकुलां य-

* Probably Joari, *Sorghain joar*.

† विशोभि in the original.

‡ श्रीपद्मदत्त in the original. The ष is obviously an incorrect writing for य and the य त्त should be vocalised.

- ६ । रिपालयन्नविकल्पविवेकनिर्मलीकृतमतिः ॥ छूडलिविषयान्तःपातिरमूरडा-
ग्रामोपगतान् कुटम्बिकायस्थमहत्तरा-
- ७ । दीन् सर्वान् समाप्तापयति अल्लु वः संविदितं यथोपरि लिखितेऽस्मिन् ग्रामे
हलदशाब्देपि हल १० मत्कभूमिर्यत्र, वाउमेकोर-
- ८ । दे(?) त्रोत्तसाङ्गसप्त यन्नाघाटाः पूर्वस्थां दिशि रत्नमुखारामदण्डकु । दक्षि-
णस्थां दिशि कमाग्रैदायादण्डकु । पश्चिमायां दिशि मधुक-
- ९ । वृक्षवल्लीका । उत्तरे विजौलीग्रामदण्डकु एवं चतुराघाटविमुद्धा भूमिः
जड़िआत्तेत्रेण सह सजलस्थला सख्यावरजङ्ग-
- १० । मा साधमर्द्धभूतभविष्यदर्शमाननिःशेषादायसहिता चास्माभिर्भैलखामिस-
मीपावासे नवत्यधिकशतैकोपेतस-
- ११ । हस्ततमे संवत्सरे माघे मासि शुक्लपक्षे पूर्वमायां सोमवारे अश्वतोपि संवत्
११६० माघसुदि १५ सोमे ॥ पुण्योदकेन विधिव-
- १२ । त् खात्वा देवादीन् सन्तर्प्य भास्करं भवानीपतिं चाभ्यर्च्य ऊतभुजि ऊत्वा
मातापित्रोरात्मनश्च पुण्याय ङ्कारीग्रामविनिर्गताय वाज-
- १३ । सनेयशाखिने भरद्वाजगोत्राय । भरद्वाज । आङ्गिरस । वार्हस्पत्य । ढ-
प्रवराय । वापनप्रपौत्राय । सान्निपौत्राय । जाटपुत्राय ।
- १४ । गभस्तशर्मणे त्राक्षत्राय कुशलतापूतेन हस्तोदकेन स्वस्तिवाचनपूर्व्यं चन्द्रार्क-
समकालं पुत्रपौत्राद्यन्वयानुगामित्वेन सम-
- १५ । खं कृत्वा दत्तेति मत्वा भवद्विराक्षाश्रवणविवेकैर्भूत्वा भागभोगादिकं सर्व-
मस्मै समुपनेतव्यं तदेवामुस्य भूमिं सनिर्गमप्रच-
- १६ । यां ससर्वासनेक्षुकार्यासकुसुम्भशशास्त्रमधुकादिभूतहं लवन(श)खनिनिधा-
नामपरैरपि सीमान्तर्गतैर्वस्तुभिः सहितां
- १७ । सवाद्याभ्यन्तरालायां भुङ्गानस्य कर्षतः कर्षयतो दानाधमनविक्रयं वा कुर्वतो
न केनचित् काचिद्वाधा कर्त्तव्या उत चास्मद्वा-
- १८ । नमनाच्छेद्यमनाहार्यश्चेति भाविभिरपि भूमिपालैः पालनीयमिति ॥ उक्तञ्च ॥
वज्रभिर्वसुधा भुक्ता राजभिः सगरादिभिः ।
- १९ । यस्य यस्य यदा भूमिस्तस्य तस्य तदा फलं ॥ लिखितञ्च धर्मलेखिना श्रीसू-
ट्टेन उत्कीर्णञ्च विद्यातिकाजल्पनेनेति ॥

*Recent Trans-Frontier Explorations, communicated by COL. J. T. WALKER,
C. B., R. E., Surveyor-General of India.*

(With a Map.)

During the year 1876, the Mullá, one of the explorers attached to the Great Trigonometrical Survey, made a survey up the course of the Indus from the point where it enters the plains above Atak, to the point where it is joined by the river of Gilghit. All other portions of the course of the Indus—from the table-lands of Tibet, where it takes its rise, down to its junction with the ocean—have long since been surveyed; but up to the present time this portion has remained unexplored, and has been shown on our maps by a dotted line, the usual symbol for geographical vagueness and uncertainty. Here the great river traverses a distance of some 220 miles, descending from a height of about 5,000 feet to that of 1,200 feet above the level of the sea. Its way winds tortuously through great mountain ranges, whose peaks are rarely less than 15,000 feet in height and culminate in the Nanga-Parbat, the well-known mountain whose height, 26,620 feet, is only exceeded by a very few of the great peaks of the Himálayas. The river in many places is hemmed in so closely by these great ranges, that its valley is but a deep-cut, narrow gorge, and, as a rule, there is more of open space and culturable land in the lateral valleys, nestling between the spurs of the surrounding ranges, than in the principal valley itself.

The positions and heights of all the most commanding peaks in this region had been long fixed by Captain Carter's observations at trigonometrical stations on the British Frontier line; but no European has ever yet penetrated into it.* Very difficult of access from all quarters, it is inhabited by a number of hill tribes, each independent and suspicious of the other, who are in a great measure separated and protected from each other by natural barriers and fastnesses. As a whole, the region has never been brought into subjection by any of the surrounding powers. Each community elects its own ruler, and has little intercourse with its neighbours; and with the outer world it only communicates through the medium of a few individuals who have the privilege of travelling over the country as traders. The Mullá possesses this privilege, and thus in the double capacity of trader and explorer, he traversed along the Indus, and through some of the lateral valleys, leaving the others for exploration hereafter.

* Several itineraries which were obtained from native information are published in Dr. Leitner's *Dardistan*, and they have been combined together, with considerable ingenuity and very tolerable success, by Mr. Ravenstein, in a map published in the *Geographical Magazine* for August, 1875.



cutta, April 18

This work done, he proceeded, in accordance with his instructions, to Yásín, marching through the Gilghit Valley, but not surveying it, because the labours of the lamented Hayward, who was murdered at Yásín, already furnished us with a good map of that region. From Yásín he surveyed the southern route to Mastuj through the Ghizar and Sar Laspur Valleys; this has furnished an important rectification of a route which had hitherto been laid down from conjecture only, and very erroneously; for the road, instead of proceeding in a tolerably straight direction from Yásín to Mastuj, as was supposed, turns suddenly from south-west to north-north-east at Sar Laspur, which is situated at some distance to the south of the direct line, in a valley lying parallel to the valley of Chitral. At Mastuj the Mullá struck on to his survey of the route from Jalálábád, *vid* Dir and Chitrál, to Sarhadd-i-Wakhán, in 1873, and then proceeded along that route towards the Baroghil Pass, as far as the junction of the Gazan with the Yarkun River, and then along the northern road from Mastuj to Yásín. This road turns up the Gazan Valley, crosses the Tui ar Moshabar Pass—which is conjectured to be probably not less than 16,000 feet in height—and, after traversing a deep crevassed glacier for a distance of about eight miles, reaches the point where the Tui River issues in great volume from the glacier; the road then follows the course of the river down to its junction with the Warchagam River, a few miles above Yásín.

Returning to Sar Laspur, the Mullá next surveyed the route to the south-west, up the valley leading to the Tal Pass. This pass is situated on a plateau of the range which connects the mountains on the western boundary of the valley of the Indus with those on the eastern boundary of the valley of Chitrál, and is generally known by the people of the country as the Kohistán. The sources and most of the principal affluents of the Swát and the Panjkorá rivers take their rise in this region, all the most commanding peaks of which were fixed by Captain Carter's triangulation; but of the general lie of the valleys relatively to the peaks, nothing at all definite has been known hitherto. The Mullá has done much to elucidate the geography of this region. On crossing the Tal plateau he descended into the Panjkorá Valley, and traversed its entire length down to Dodbah, at the junction of the Dir river with the Panjkorá, where he again struck on his route survey of 1873.

It would have been well if he could then have gone done the Panjkorá to its junction with the Swát River, but circumstances prevented him from doing so. He therefore travelled along the Havildar's route of 1868 as far as Miánkálai, and then surveyed the road to Nawágai and on to Pashat in the valley of Kunar; and finally, returning to Nawágai, he surveyed the road from there down to the British fort of Abazai.

Thus the explorations of the Mullá have added much to our knowledge of the geography of the interesting regions lying beyond our northern Trans-Indus Frontier. A good deal, however, still remains to be done before our knowledge of these regions is as full and complete as it should be, and every effort will be made to carry out further explorations as soon as possible.

The accompanying sketch map has been constructed to illustrate the Mullá's operations; it also shows the localities where more information is wanted. In the north-east corner the results of a recent reconnaissance of portions of the Karambar and the Nagar Valleys by Captain Biddulph are given, but somewhat modified from his map of the country.



Notes on two ancient copper-plate Inscriptions found in the Hamírpúr District, N. W. P.—By V. A. SMITH, B.A., B.C.S. With a Note by PRÁNNÁTH PAṆḌIT, M.A., B.L.

In 1872, a peasant when ploughing in the lands of Mauza Nanyaurá, Parganah Panwárá, Zila Hamírpúr, turned up two inscribed copper-plates. The plates were brought to Mr. W. Martin, C. S., who is now on furlough, and were left by him in the hands of a local paṇḍit (Muralidhar) who was in his service. With the assistance of this man, I have had Nágarí transcripts prepared, and have made translations of the inscriptions.

Plate No. I is 15 inches long by 11 inches broad, and is covered with an inscription of 19 lines, very well engraved and in good order. This record is interesting as throwing light on the chronology and order of succession of the Chandel kings. It tells us that Vidyádharma Deva was succeeded by Vijaya Pála Deva, and that the latter was succeeded by Deva Varmma Deva, lord of Kálinjar, who in 1107, Samvat, bestowed the lands to which the record relates. The statement that Vijaya Pála Deva succeeded Vidyádharma Deva is in accordance with the testimony of the Chhattarpur Mhau inscription, but that document gives Kírttí Varmma as the name of Vijaya Pála's son and successor, whereas my copper-plate instead of Kírttí Varmma names Deva Varmma Deva. Both inscriptions apparently refer to the same prince.

General Cunningham conjecturally assigns 1122 Samvat (1065 A. D.) as the date of the conclusion of Vijaya Pála's reign and the accession of Kírttí Varmma. Whatever was the name of Vijaya Pála's successor, it is clear from this copper-plate inscription that he had begun his reign previous to 1107, Samvat (1050 A. D.).

Plate No. II is 14 inches long by 8 inches broad, and has the edges turned up all round, so as to form a raised rim. The inscription is in 14 lines, and the letters have evidently been made with a punch, because their outlines are visible on the back of the plate. The writing is more crowded, and the characters more difficult to read than those in Plate No. I, but with the exception of one or two epithets which are unimportant to the general sense, I think my readings and translation are pretty complete and correct. I have not been able to make a facsimile. Like No. I, the document is a deed of gift of lands to a Bráhmaṇ. The donor is Rája Dhanga, and in accordance with the Khajuráho inscription, it is recorded that he was the son of Yaśo Varmma, who was the son of Harsha Deva. The date 1055 Samvat (998 A. D.) is written both in words and figures. The Khajuráho inscription which records Dhanga's self-sacrifice in the sacred waters of Prayág is dated 1056 Samvat; this copper-plate shows that he was still living in 1055 Samvat.

This record, therefore, adds but little to our knowledge of Chandel chronology, but it is of value as corroborating the evidence of the Khajuráho inscription, respecting the order of succession of the kings.

It is noticeable that the recipient of the grant recorded in this copper-plate is Rudra Śrī Yaśodhara, a member of the Bháradwája *got*, which traced its descent from Angiras, Bháradwája and Várhaspatya: probably he was the same person as the Prime Minister Yaśodhara, mentioned in the Khajuráho record. The donee whose name is recorded in Plate No. I, belonged to the same family, and this is perhaps the reason why both inscriptions were found together.

I have not had an opportunity of visiting Mauza' Nanyaurá, but I am informed that an ancient Gaharwár tank exists there, and that there are also the remains of an old village site.

The present village is said to have been founded by one Noní Sáh Kurmí, and to be named after him.

Note.—Dhanga's name has been sometimes incorrectly written Bānga, the mistake is evidently due to the similarity of the characters for *b* ब and for *dh* द in Kutila writing.

NO. 1. NANYAURÁ COPPER-PLATE.

Nágarí Transcript.

ॐ स्वस्ति । परममहार्कमहाराजाधिराजपरमेश्वरश्रीविजयचरदेवपादानुध्यातपरम-
महार्कमहाराजाधिराजपरमेश्वरश्रीविजयपाक्षदेवपादानुध्यातपरममहार्कमहाराजाधि-
राजपरमेश्वरपरममाहेश्वरश्रीकालंजराधिपतिश्रीमदेववर्षादेवः कुमली (1) । प्रसापानस-
कवलितासिद्धिदिव्यसत्त्वज्ञः । सुकुमारज्ञनिहतारातिवजितविषयदानदीक्षामुदा । य

सन्नेन युधिष्ठिरं विजयते त्वाग्नेन चन्द्राधिपं माधीर्यैश्च सचोदधिं प्रभुतया देवं ब्रह्मीवचनम् ।
 रूपेणापि मनोमयं पटुतया श्रान्तं सवाचस्यति तस्मान्नैर्विशदेन्दुचामधवसैः किं कीर्तितैः
 स्त्राकुतैः (2) ॥ युधिमान् धार्मिकः शूरः सत्यवादी जितेन्द्रियः । कृतज्ञः सज्जनानन्दज(न)नः
 शुभदर्शनः ॥ रत्नमनेकमुत्तमसमस्तकृतशरीरः । निःसारसुन्दरतरालोक्तकदलीगर्भविधमा-
 कारसंसारमाकलय्य (3) सन्तत ११०० वैशाखमासे शुक्लपक्षे तृतीयायां सोमदिने सुप्रवास-
 समावासे राजपुरावस्त्रायां रत्नमौलिसम्पन्न कठघैषामनिवासि सप्तमस्यनपदान् ब्राह्मणे-
 नान् राजपुरवांश्च बोधयति (4) । आत्मीयमातुः राज्ञीश्रीभुवनदेवाः साम्प्रत्युत्तीकैः ।
 जले विधिवत्प्राप्ता देवमनुष्यपूर्व्यान् पिबन् सदमर्तिहारादकेन सन्तर्प्य रवेरर्घ्यं दत्त्वा भगवत्सं-
 भवाभीषति समभ्यर्च्य यथावत् कृतभुजि कला च (5) । मातापित्रोरात्मजस्य पुण्ययशोभि-
 द्दये (6) । उकाराी महामानविनिर्गताय (7) मारहात्मजोपाय चंमिरस्य वार्धक्यस्य भार-
 ह्वाज विप्रवराय यजुर्ध्वंशशाधिने ब्राह्मण अभिमन्यवे महारक्षापत्राय जयवरनपत्रे वेदधे-
 र्दांगपारमाय षट्कर्माभिरताय सुश्रीलाय प्रानोयमस्याभिः सज्जनस्यलाः (8) साक्षमशूकः (9)
 समर्थावरपावाचः (10) समैश्वराचलाः (11) सलोचनवकाकरः (12) सवननिवाहः (13)
 चतुरावाढविशुद्धः (14) सखीमाहकपूतिनोचरपर्यन्तः (15) पूर्वदत्तदेवब्राह्मणवर्जितः (16)
 साधनत्वेन प्रदत्तः । तद्वत्किराज्ञानवक्त्रविधेर्भूला (17) समस्तमानभोगकरश्चिरञ्च दद्या-
 दायादिकमुचितामुचितं (18) ऋक्षोपनेतव्यं । सचन्द्रार्क्षेचित्युदधि यावत् सप्तवर्षौचसन्त्या
 भुमस्तु भोगेन वा प्रयच्छतु चन्द्राय वा ददातु विज्रीणातु क्वपु क्वापयतु वा न कैरपि-
 चाविभोक्तुभिः परिपन्थिभिर्भविताय (19) । वज्रमि वंशुषा भुक्ता राजभिः समरादिभिः ।
 यस्य यस्य सदा भूमिसाल्य तस्य तदा फलम् ॥ (20) भूमिं यः प्रतिष्ठयति यश्च भूमिं
 प्रयच्छति । उभौ तौ पुण्यकर्माभौ नित्यं सन्तगाभिर्भौ ॥ (21) ब्रह्मं भद्रासन्नं द्रव्यं वराद्याः
 वरवाचनाः । भूमिदानस्य विन्दानि फलं सन्तः पुरन्दर ॥ (22) सद्गतां परद्गतां वा यो
 चरेत् सद्युत्तरा । स विद्यायां कृमिर्भूला पिबतिः सद्यः सज्जति ॥ (23) सचंनेकं ज्ञानेकां
 भूमेरधिकमंजुलम् । चरन्नरकमायाति यावदाभूतसंश्रयम् ॥ (24) जगत्समन्वासीः

श्रीमद्देववन्द्यदेवः ।

Translation.

Om Svasti. The supreme master, *Mahārāja Adhirāja*, the supreme lord *Śrī Vidyādhara Deva*, whose feet were adored by the supreme master *Mahārāja Adhirāja*, supreme lord, *Śrī Vijaya Pāla Deva*, whose feet were adored by the supreme master, *Mahārāja Adhirāja*, supreme lord, the devout follower of *Mahesvara*, the lord of *Kālinjara*, *Śrī Deva Varma Deva* — may he prosper! The fire of his (*Deva Varma's*) prowess devours the extremities of space; and he is the preceptor in the rite of giving widowhood to the wives of foemen slain in the arena of battle. Who by truthfulness conquers *Yudhisthira*; by munificence, the lord of *Champā* & *c.*, *Karna*; by depth, the great ocean; by sovereignty, the god beloved

of *Sachí*, i. e., *Indra*; by beauty too, over *Manobhava*; by eloquence, over *Sukra* with *Váchaspati*; what is the use of recounting his other qualities, white as the clear splendour of the moon? Wise, religious, valiant, truthful, subduer of his passions, grateful, the producer of the gladness of good men and of auspicious appearance. Thus his body (is) adorned with many qualities. Reckoning this world to be insubstantial (worthless), yet beautiful to look upon as the pith of a plantain tree; on Monday the third date of the black fort-night of the month of *Baisákha*, Samvat 1107 — — — — — (25) in *Rájapurávastá*, informs the principal inhabitants, of whom Bráhmaṇas are the foremost, of the village *Kathadau* attached to *Ranamaulla*, and all Royal officers. On the anniversary of the death of my mother, *Sri Bhuvana Devi*, Queen, having bathed in water according to sacred precept, having satiated the *Manes* of ancestors with *kusa*, *sesamum* and water, after satisfying gods and men, having presented an *Arghya* to the Sun, having duly worshipped the god, the lord of *Bhaváni*, i. e., *Shiva*, and having presented oblations in the fire, according to usage; For the increase of the virtue and fame of my parents and myself, to the Bráhmaṇa *Abhimanyu*, son of *Bhatta Ellá*, grandson of *Jayavara*, originally an inhabitant of *Tukarí Bhatta Gráma*; a member of the *Bháradvāja gotra* and the triple *pravara* of *Angirasa*, *Brihaspati* and *Bháradvāja*, skilled in the *Vedas* and *Vedāngas*, engaged in the six acts proper for a Bráhmaṇ, and of excellent disposition—to him this village has been granted by us with its land and water, its mango and *mahua* trees, with its hollows, waste and stones, its rocks and tillage (?)—with its mines of metal and salt, with its forest and concealed treasure, with its clear defined boundary, with all grass, watering-places (?) and pastures for kine within its limits, excluding aught previously given to the gods or Bráhmaṇs, as a *Sāsana*. Therefore, by you all complying with the orders (herein conveyed) all the rents in kind, taxes, gold payments, fines, hereditary rights and the rest should be made over to this person. Till the moon, sun and earth endure, he with his son, grandson and descendants should enjoy (the grant) or assign it, or give away to another, till it or cause it to be tilled, none who enjoy the kingdom after me, should prove an obstacle in the way. By many kings, *Sagara* and others, the earth has been enjoyed. Whosoever has been the land, his has been the fruit. He who accepts lands and he who grants lands, both these doers of virtuous deeds certainly go to Heaven. A Conch, a throne, an umbrella, fine horses and fine elephants, these mark the grant of lands; and the result is Heaven, O *Indra*! He who resumes land, whether given by himself or given by others, becomes a worm in filth and falls with his ancestors. By stealing a single *suverna*, a single cow, or even a finger-breadth of land, (the thief) remains in hell till the end of the Universe. Great prosperity. *Sri. Srimad Deva varmma Deva.*

No. 2. NANYAURÁ COPPER-PLATE.

Nāgarī Transliteration.

ओं हस्ति । आसीत्कल्पततः [कलौ] प्रकथिनामानन्दकन्दः सतां निवासां नयना-
 स्तन्यरवलसात्यन्तकेतुः परः । सेतुः सङ्गरवारिषेष्टमयतल्लोलोत्पलमणिः श्रीमच्छेन्द्रमुने-
 र्वासीयसि कुले श्रीवर्षदेवोत्पन्नः ॥ प्रचक्षन्मण्डलापस्य करकान्तमहीभूतः । निदाघभा-
 स्सरस्यैव प्रतापो यस्य दुस्सहः ॥ अरितिसिरमिकरवलभिदरिकरिकरयन्त्रभेदनकुठारः
 तन्महीलताक्षयातल्लक्ष्मणातोयशोवर्मा ॥ यस्मिन्दुकुन्दश्रेष्ठे यमसा धवलीकृताः । कुलाचल-
 मुखाः सेवा जाताः किन्नरयोषिताम् । तस्य श्रीवर्षदेवोभूत्पुनः पात्रं जयत्रियः । असंख्य-
 संख्यविख्यातः सङ्गधारापराक्रमः ॥ चित्रं यदरिगारीणां हृदये विरचामलः । अजय-
 मन्त्रपानीयसिन्धुमनोपि वर्धते ॥ भग्नेनःपुरिकालकेषु सुरतग्रीवास्तु कण्ठपथः काठिन्यं
 कुचयोर्ध्रुवोः कुटिलता चन्द्रे कलङ्कस्थितिः । सूक्ष्मं कविवाचि कैरवने निबोद्ध
 द्वेषिता यस्मिन्नेकमहीपतौ कदलिकाकाष्ठेषु निस्सारता ॥ परमभट्टारकमहाराजाधि-
 राजपरमेश्वरश्रीश्रीवर्षदेवपादानुध्यात परमभट्टारकमहाराजाधिराजपरमेश्वरश्रीवर्षदेव-
 देवपादानुध्यातपरमभट्टारकमहाराजाधिराजपरमेश्वरश्रीकाञ्चनराशिपतिश्रीधर्मदेवः । स-
 न्मत्स्यसप्तमे पञ्चपञ्चमदक्षिणे कार्तिकपौर्णिमास्यां रविदिने एवं समत् १०५५ कार्तिक-
 शुद्धि १५ रवौ चदेवान्(?)कार्तिकायां सैवकेयपद्मासप्रवेशीकृतमण्डले । रोहिणीवृह-
 द्यामन्दकन्दे हरिहलाहने । भारद्वाजसमोवाय निप्रवराय भारद्वाज आनिरस बाईसत्य
 बाजसनेयशशिने तर्काधिकविनिर्मितदूर्ध्वोत्तराग्रामाभिजनाय वज्रश्रीश्रीश्रीश्रीवर्षदेव-
 जयकुमारसुताय जवरवाचप्रतिवर्द्धं सगच्छाक्षं समिञ्जोन्नत साधनमूर्धं सवारोपरप्रख्यात
 चतुःशीमापर्यन्तं । शुक्लीनामधेयग्रामम् । हृदये पुण्यग्रसोमंतापिचोरयात्मनः । यामपयास्य
 अरितः स ददौ धर्मवत्सलः । दत्तादिदेव तत्तत्यान् जनाञ्जनपदप्रियः । भागभोगहरि-
 णादिप्रदानैः सुखमास्यताम् । ओं तथा स्मृतिकारैः । वज्रमिर्वैद्युधा भुक्ता राजभिः
 सगरादिभिः । यस्य यस्य वदा भूमिस्तस्य तस्य तदा फलम् । भूमिं यः प्रतिष्ठकतिं यस्य
 भूमिं प्रयच्छति । समौ तौ पुण्यकर्माणौ नियतौ स्वर्गगामिनौ ॥ मामेकां सुवर्षमेकं
 भूमेरप्येकमनुसम् । हरभरकमायाति यावदाभूतसंज्ञकम् ॥ इदं श्रीवर्षदेवस्य शासनं
 शासनार्जितं । प्रतापतापितारातिचक्रस्य क्रमवर्जिनः ॥ श्रीधर्म ।

Translation of the Inscription of the Nanyaurá Copper-plate, No. 2.

Om. It is well. Śrī Harsha Deva, the king, of the great family of Śrī Braharendra Muni, was [as] the *kalpa vriksha* the root of joy to well-wishers, the water of immortality for the eyes of good friends, a very *ketu* in the destruction of hostile armies, a bridge in the surging sea of good men's burdens, the Jewel on the diadem of the three worlds, the sovereign whose hand dearly loved the sword, whose glory like that of the summer sun was insupportable. From that abode of generosity sprang Yaśo Varmma, a very Indra in the destruction of the dark hosts of (his)

enemies, an axe in cleaving the trunks of the elephants of (his) enemies, by whose radiance like the whiteness of the moon and jasmine were illuminated, the caves of *Kulāchala* frequented by the consorts of the *kinnaras*; his son was Śrī Dhanga Deva, the favourite of the Goddess of Victory the prowess of whose blade's edge was famous in numberless battles. Wonderfully did he kindle in the hearts of the enemy's wives the flame of separation, which unceasingly spread, though besprinkled with the water of tears. [In his undivided reign] there was flight in the wavy curls [alone] of the denizens of the *antahpura*, in amorous dalliance [alone] there was seizure by the neck, in female breasts alone was hardness and brows [alone] were crooked, on the moon [only] were spots, and in the plantain tree [only] was saplessness: the poets spake well, and amidst clusters of the *Kairava* [*Nymphaea esculenta*] alone there was enmity at the rise of *Mitra* (meaning both Sun and friend). The king and sovereign lord Harsha Deva, the destroyer of the exultation of enemies, succeeded by the king and sovereign lord Yaśo Varmma, destroyer of the exultation of enemies, succeeded by the king and sovereign lord Dhanga Deva, destroyer of the exultation of enemies, ruler of Kālinjar, in the Samvat year 1055 at the full moon of Kārtik, on Sunday the 15th day of the bright half of the month, to-day here in Kāśī, when the orb [of the moon] which is a joy to the heart of Rohiṇī, and is marked with the form of a deer, was seized as a mouthful by the son of Sinhikā [*i. e.*, Rahu]—to the member of the Bhāradwāja gotra, and the threefold *pravara* of Bhāradwāja, Āngirasa and Vārhaspatya, belonging to the Vajasaneya *sākhā*, to him originally an inhabitant of *Turkáyikā* residing in the village of Durbāhara, named Rudra Śrī Yaśodhara, the son of Rudra Jaya Kumāra—to him with its waste, streams and tanks, land and water, upland and lowland, and mango and *mahúá* trees, the village of Chullī bounded on the four sides by Saśaroshara—for the sake of increasing his own and his parent's merit, he the lover of religion gave— * * * * *

, and having given the beloved of the people addressed those present saying—Remain happy by continuing to pay (the donee) rents in kind and in money and the rest. *Om*. So the writers of *Smritis* (have said): Many kings, Sāgar and others, have enjoyed territory, so long as any retained his lands, so long has his been the fruit. He who receives land in gift, and he who bestows it, both these are meritorious and assuredly go to heaven. He who filches a single cow, a single gold-piece, or one finger's breadth of land, goes to hell till the end of all things. This is the decree of Śrī Dhanga who is steadfast in the practice prescribed by the Vedas and whose ruling prowess pains the circle of his enemies. Sri Dhanga.

Note by Bābu Prannāth Paṇḍit.

The Society is indebted to Mr. V. A. Smith, B. A., B. C. S., for these two copper-plates recording the grant of two villages by two kings of the Chandel Dynasty, *Dhanga Deva* and *Deva Varmma Deva* in Samvat 1055 and 1107 respectively. Mr. Smith has sent transcript and translation of both the plates, which I have revised for publication in the Society's Journal. Some parts of the translation however, specially of plate No. 2, remain tentative and far from literal. The Note appended by Mr. Smith gives the most salient points in the grants, and after the exhaustive notice in General Cunningham's *Archæological Survey of India*, Vol. II, there is nothing to be added to the ample materials which exist concerning the chronology of the Chandel Dynasty. I have added some philological parallels gathered from several grants, and those who care to pursue the matter further may consult the Khajurāho inscription in the *Asiatic Researches*, Vol. XII, and the Ujjayini grants in the *Transactions of the Royal Asiatic Society*. Vol. I, reprinted in *Colebrooke's Works*, Vol. II, and the Banda copper-plate, *ante* p. 73. The village *Tarkayikā*, of No. 2, is the same as the *Tukāri* of No. 1, and the Dhakāri of the Banda copper-plate, *ante* p. 76. All three may be safely identified with the *Tikrī* of modern maps.

NOTES.

(1.) Compare स च परममहारकमद्योन्नजाधिराजपरमेश्वर श्रीवामदेवपादानु-
ध्यात, &c. in J. A. S. B. Vol. VIII, pp. 491, 492. Also स च परममहारकमद्या
(राजा)? धिराजपरमनादेश्वरनिजमजोपाजित श्रीकाण्डकुजाधिपत्य ओचन्द्रदेवपादानुध्यात
&c. in J. A. S. B., Vol. X, pp. 99, 100.

(2.) Compare the partly decyphered sloka तेजोमिरदस्वरः कदम्बा
श्रीदेवनिः in the 9th line of the *Dhavalā* Inscription, J. A. S. B., Vol. X,
p. 820.

(3.) Compare तेनेदं विद्युच्चलमासोक्तं ब्राह्मणं । J. A. S. B., Vol. VIII,
p. 297. The sloka संसारस्वारास्तां दृष्ट्वा तथा हि । वाताधिविधममिदं, &c. in J. A.
S. B., Vol. V, p. 379.

(4.) Compare समस्तराजपुरुषान् ब्राह्मणोत्तरान् प्रतिनिवासिपदकिलज्जपदा-
दीन् बोधयति । J. A. S. B., Vol. V, p. 379. राष्ट्रपति विषयपति घासकूलाधिका-
रिकमहारादीन् समनुबोधयति । J. A. S. B., Vol. VIII, p. 297. The royal
officers are set out in great detail in the Kumbhi grant. J. A. S. B. Vol.
VIII, p. 492, and in the Fyzabad grant. J. A. S. B. Vol. X, p. 100.

(5.) Compare खाला भगवन् भवानीपतिसमर्थः । J. A. S. B. Vol. V, p. 379.
जर्मेदायां विधिवत् खाला श्रीमन्महादेवं समभ्यर्च्य । J. A. S. B. Vol. VIII, p. 492.
मोसहाराख्यां नकायां खाला विधिवन्महादेवमुनिमनुजयुतपिढगकांक्षपविना तिमिरपट-
लपाटलपटुमहसमुद्भरोविषयमुपस्थाप्योविधितिसकलमेव च समभ्यर्च्य विभुवनचातुर्भगवतो
बाहु(दे)वस्य पूजां विधाय प्रचुरपायसेन हविषा हविर्भुजं ज्ञत्वा । J. A. S. B. Vol. X,
p. 100.

(6.) Compare मातापिनोरात्मनश् पुण्यशोभिहृदये। J. A. S. B. Vol. V, p. 379. आत्मनो यथायुर्वल्लविजयैश्चर्यविहृदये इहामुच हितार्थमात्मानुब्रूयात्। J. A. S. B. Vol. V, p. 729. मातापिनोरात्मनश् पुण्यशोभिहृदये। J. A. S. B. Vol. VIII, p. 492. मातापिनोरात्मनश् पुण्यशोभिहृदये। J. A. S. B. Vol. X, p. 100.

(7.) The phrase मुक्तावसुखानविनिर्मेताय occurs in the Copper-plate grant of *Arjuna* (Samvat 1267) in J. A. S. B. Vol. V, p. 379 but has not been translated. A similar omission is noticeable concerning the adjective prefix ओवल्लभोविनिर्मेत to the donee's name in the copper-plate grant of *Karka II* (Śaka 784) J. A. S. B. Vol. VIII, p. 297. The etymological signification of the word विनिर्मेत is "gone out or from," but I suppose that in passages like the above, it is used to denote the original residence of the donee.

(8.) J. A. S. B. Vol. VIII, p. 492, Vol. X, p. 100.

(9.) These words occur in the copper-plate grant of *Ajaya Siṃha Deva* (Samvat 932) J. A. S. B. Vol. VIII, p. 492, and have been translated into "mango trees and honey" (p. 486). Compare समप्रकाशवाटिकाविटप- of the copper-plate grant of *Jayachandra* (Samvat 1243) J. A. S. B. Vol. X, p. 100, which has been correctly translated into "with gardens of *modhu* and mango trees" (p. 103). मधूक signifies the tree *Bassia latifolia*, and is never so far as I am aware used as a synonym for मधु, honey.

(10.) Compare समतेष्वर seemingly a mistake for समतेष्वर in *Jayachandra's* copper-plate grant. J. A. S. B. p. 100, which has been translated at p. 103 into "with caves and fertile farms." ऊषर according to Wilson signifies saline soil. The phrase समतेष्वरः in *Ajaya Siṃha's* copper-plate grant J. A. S. B. Vol. VIII, p. 492, where it is translated into "together with salt-pits."

(12.) Compare सलवहाकरः in J. A. S. B. Vol. VIII, p. 492. सल्लोहलवहाकरः in J. A. S. B. Vol. X, p. 100.

(13.) Compare समिधिः सोपनिधिः in *Pravara Sena's* copper-plate grant. J. A. S. B. Vol. V, p. 729. सवनपर्यंतः in *Ajaya Siṃha's* copper-plate grant. J. A. S. B. Vol. VIII, p. 492; and समिरितवनविधानः in *Jayachandra's* copper-plate grant. J. A. S. B. Vol. X, p. 100.

(14.) Compare चतुराष्टादशोपलक्षितः in the copper-plate grant of *Karka II*. J. A. S. B. Vol. VIII, p. 298. चतुराष्टादशवर्गः in *Ajaya Siṃha's* copper-plate grant. J. A. S. B. Vol. VIII, p. 492 and सोर्वाधचतुराष्टादशविशुद्धः in *Jayachandra's* copper-plate grant. J. A. S. B. Vol. X, p. 100, the first half of which compound seems to have been omitted from the translation at p. 103. The words in the present plate may also be read as चतुःकण्डविशुद्ध. which synonymous expression also occurs in *Arjuna's* copper-plate grant, J. A. S. B. Vol. V, p. 379.

(15.) Compare समोन्नधारः in *Ajaya Siṃha's* copper-plate grant. J. A. S. B. Vol. VIII, p. 492. महावर्तिनोन्नधारदयनः in *Jayachandra's* copper-plate

grant. J. A. S. B. Vol. X, p. 100, where it has been translated into "which extends as far as *Trinayuthi*." (p. 103).

(16.) This is the usual reservation about previous endowments. Compare पूर्वप्रदत्तदेवदायप्रदायपरहितो in J. A. S. B. Vol. VIII, p. 298. देवनायक-मुक्तिवर्जम् Vol. V, p. 379.

(17.) Compare आश्राविषेयभूमा in J. A. S. B. Vol. V, p. 379. आश्रावि-षेयोभूय in J. A. S. B. Vol. X, p. 100.

(18.) Compare यथा दीयमानभोगभोगकरहिरखादिकं. J. A. S. B. Vol. V, p. 379, which is translated into "the full usufruct of all the rights and dues heretofore paid to Government," (p. 382). Also यथादीयमानकरकर-पूरनिकप्रभृतिनियतानियतसमस्त in J. A. S. B. Vol. X, p. 100 which is generally translated at p. 103 into "its revenues, as settled, or are to be settled."

(19.) Compare आचन्द्रादित्यकालीयः &c. in J. A. S. B. Vol. V, p. 729. सचन्द्रार्कवसरित्यर्बतसमकालीनः &c. in J. A. S. B. Vol. VIII, p. 298.

(20.) This *sloka* occurs amongst others in J. A. S. B. Vol. V, p. 379. Vol. VIII, pp. 298, 493. Vol. X, p. 100.

(21.) J. A. S. B. Vol. VIII, p. 494. Vol. X, p. 100.

(22.) Compare J. A. S. B. Vol. VIII, p. 494 where वरावा is a mistake for वरावाः, and Vol. X, p. 100.

(23.) J. A. S. B. Vol. V, p. 379. Vol. VIII, p. 493. Vol. X, p. 100. In *Pravara Sena's* copper-plate grant the latter half of the *slok* is different :

सुदनाम्परदत्ता वा यो हरेत वस्तुभराम् ।

मवां दत्तसहस्रस्य हस्तुर्हरति दुष्कृतमिति ॥ J. A. S. B. Vol. V, p. 729.

(24.) In this *sloka* सुवर्षे should be substituted for the sake of the metre for सवर्षे. Compare J. A. S. B. Vol. VIII, p. 493.

(25.) The words in the original सुवर्षास समावाये seem distinct enough, but I am unable to attach any meaning to the compound.

The Antiquities of Bagurá (Bogra).—By H. BEVERIDGE, C. S.

Though Bagurá is almost a by-word among the Officers of Government for seclusion and dulness, yet like most places in this world it has attractions which only require unveiling. Perhaps to most Anglo-Indians, Bagurá is chiefly interesting, because it was the residence of Sir George Yule and the scene of many of his tiger-slaying exploits, but in reality the district has claims to attention of another and more enduring order. Foremost among these is the circumstance that it occupies an important place in the legendary and historical annals of Bengal. It is traversed from north to south by the sacred Karatoyá, which divides it into two nearly equal portions. This river has now dwindled into an insignificant stream, easily fordable in the cold weather and scarcely navigable except

in the height of the rains. But in old times, it was a great river, and formed the boundary between Bengal and Kámrúp. The western bank has apparently undergone little change. The old rampart, known as Bhím-jangal, still runs alongside of the western bank, and the ancient mound and fortification of Mahásthán continues to overhang the sacred bathing-place at Síla-dwíp; but on the east the appearance of the country has been greatly changed. The old river-bed has been nearly filled up, and long and wide churs, "made blithe by plough and harrow", now cover the channel up which the ships of the famous Chánd Saudágar used to sail.

Though no longer a territorial boundary, the Karatoyá is still remarkable for the demarcation which it makes between two distinct kinds of soil. On the west, Bagurá is a veritable land of Edom, the soil being almost as red as blood. It is at the same time so hard and tenacious, that ditches cut in it retain their sharpness of outline for years, and that the walls of the peasants' huts are almost invariably made of earth. The ant-hills so common on the edges of the fields testify to the peculiarity of the soil, for they stand up in sharp and many-pointed pinnacles and are like Adens in miniature. On the east of the Karatoyá, however, all is sand and alluvium, and the ryots have to construct the walls of their houses with reeds or mats. This difference of soil is said to affect the crime of the district; for burglaries are reported to be rare in the western thánás, as it is no easy matter for thieves to break through and steal, when the walls of the houses are so thick and hard as they are in the "Khíar" land. The etymology of the word Karatoyá is indicative of the antiquity and sanctity of the river. The name is derived from *kar* 'the hand' and *toyá* 'water', and is held to signify that the river was formed by the water which was poured on the hands of Siva, when he married the mountain-goddess Párvati.

I find also that there is the same tradition in Bagurá as in Maimansingh about the origin of the name Das-kahániá as applied to Sherpur. The Bagurá Sherpur is called Das-kahániá as well as the Maimansingh Sherpur, and the explanation given is, that the Karatoyá was once so broad that ten káhans had to be paid for crossing it. The explanation, however, does not seem a very probable one, for ten káhans means 12,800 kaurís, *i. e.*, one rupee, and I can hardly believe that any Bengali ever paid so much for crossing a river. It is just possible that the charge had reference not to the breadth of the river but to the fact that it separated two rival kingdoms. The charge may therefore have been in the nature of an embargo or an export-duty, and went for the most part into the pocket of the king or his representative, and not to the ferryman. It would be quite in accordance with the principles of native finance to levy such exorbitant duties on people leaving the country or taking merchandise abroad.

By the Hindus Bagurá is popularly identified with the country of king Virat, where the five Pándavas remained hidden for a year. Bagurá, they tell us, was the Dakshina Go-grih or southern cow-house (*Scotticè* byre) of king Virat, the northern one being in Ghorághát, *i. e.*, Aswasála. Bhím, they say, disguised himself as Virat's herdsman, and built the rampart known as Bhím's Jangal to make a pen for the cattle. So say the Paṇḍits, while the ryots improve the evidence got from this by pointing to the stone-pillar in the Badalgáchhi tháná and calling it Bhím's *pánti*, *i. e.*, Bhím's ox-goad. Additional corroboration is sought from the fact that there are villages in Bagurá, known by the names of Virat and Kichak (Virat's brother-in-law). Unfortunately, however, names of places are more likely to be the offspring of traditions than to be evidence of their genuineness, and even if the village of Kichak be old, it more probably derives its name from the wandering gypsies and robbers of the last century who were called Kichaks, than from the villain of the Mahábhárat.

A more convincing indication of the antiquity of Bagurá was obtained only last year when a tank was being dug in the middle of the town. The tank had been excavated to a considerable depth, when the workmen came on the top of a brick well. The well is still standing in the tank and may be seen by the curious. It is circular in form and solidly built with large, thin bricks which are so broad in proportion to their length as to be nearly square. The mode of building seems peculiar, for the bricks are arranged in layers which are alternately composed of flat and perpendicular bricks. The top now visible appears to me to be the real top of the well, and it is some fifteen feet below the present surface of the country. The remarkable thing is that the earth is not sand or chur-earth, but is solid, red soil. How the well came to be where it is, I cannot explain; but if the fifteen feet of earth were really gradually deposited above it, then the well must be many centuries old. Close to this tank, and only separated by the public road, there is an interesting proof of the antiquity of the soil in a magnificent Banyan tree. It is, I think, the finest tree I have seen next to that in the Botanical Gardens at Calcutta, and it is much more attractive than the latter, because it is still in the heyday of its career of beneficence. The Bagurá market is held under it and twice a week hundreds of men and cattle are sheltered by it from the sun and rain.

The real glory of Bagurá perhaps is the Badalgáchhi pillar which bears an inscription of the Pál Rájás, and which has been described by Sir Charles Wilkins and more recently by a native gentleman. I have never seen this pillar, and I hear that it is now so shrouded in jungle as to be almost inaccessible. As it is situated in the Government Estate of Jaipur, it is to be hoped that the authorities will look after its preservation. It is locally known as Bhím's *pánti* or ox-goad.

The most widely-known antiquity in Bagurá is Mahásthán, or the Great Place, which is situated seven miles north of the Civil Station. Mahásthán probably originally owed its importance to its being near a sacred bathing-place, and hence some have with a perverse ingenuity suggested that the true name is Mahásnán. Afterwards it became the habitation of a Kshatriya prince named Parasurám. Some traditions identify him with Parasuráma the destroyer of the Kshatriyas, though to do this, it is necessary to change his caste and make him a Bráhmaṇ. He was defeated and slain by a Muhammadan, named Muhammad Sháh Sultán, and probably it is this circumstance which has done most to perpetuate his fame. Muhammad Sháh Sultán is buried at Mahásthán, and his tomb is annually visited by thousands of pilgrims. There is no inscription on the tomb, and no one seems to know exactly who he was or where he came from. He bears the title of Máhi-suwár or fish-rider, and Hindus who swallow their own traditions wholesale, think they must rationalize this epithet by referring it to the figure head of the ship which brought the faqír. It is hardly worth while to do this when there are so many more marvels connected with him. The name Máhi-suwár probably has its origin in invention, pure and simple.

The only genuine inference which we can make, I think, from Muhammad Sháh's history is, that he was the hero of a popular rising. He was not a fighting man apparently, and is never called a Ghází, like the famous Ismá'il of Rangpúr. Parasurám was probably a bigoted tyrant, and was killed by those of his subjects who had turned Muhammadans. This view is supported by the local tradition that Parasurám could not bear the sight of a Musalmán. It seems also certain that Muhammad Sháh was helped by Parasurám's own subjects; for the tradition is, that one Harpál, the Rájá's sweeper, used to convey information to Muhammad Sháh of what was going on inside the palace. The sweeper's tomb is still pointed out on the mound of Mahásthán, and until Muhammadans got more puritanical, they used to make offerings at it of *sharáb* and *kabáb*, *i. e.*, meat and wine. Muhammad Sháh's tomb is in good preservation and is lighted up every night. It is surrounded by a wall, and close to the doorway there is a large stone Gauripát (not a lingam) lying on the ground. Mr. O'Donnell has described Mahásthán in the Asiatic Society's Journal for 1875, Part I, No. 2, but there are some errors in his account. As far as I can learn, the legend of the beautiful Sila Deví has its origin in a mispronunciation. The original name of the place is Siladwip, *i. e.*, the mound of stones, '*dwíp*' in Bagurá being used to mean any high place and the epithet *Sila* being applied to this one on account of the large stones lying about on it. The populace, however, have lost sight of this meaning, and so started the tradition of Sila Deví. There is no flight of stairs at Sila Deví's Ghát, only

two old trees. The sacred part of the river extends over $2\frac{1}{2}$ reaches or about two miles, from Skand (a name of Siva) ghát to Gobindghát in the village of Gokul. The place called Síla Devi's ghát lies about half-way between the above gháts. An annual fair is held in the month of Chait, but the most sacred time is when the conjunction of the planets admits of the bathing's taking place in the month of Pús (Pús Náráyani).

Mr. O'Donnell speaks of the grant for the lákhiráj of Mahásthán having been confirmed in 1666 by the Governor of Dháká. In fact, however, the confirmation is dated 7th Jumáda I, 1096, A. H. (1st April, 1685) in the thirtieth year of the reign. I have seen the original *sanad*, which is in the Record-room at Bogra. The deed bears the seal of Kokultásh Muzaffar-Jang [Husain]. It is in the form of an order addressed to the officials of Silbaris in Sirkár Bázúhá, and directs them to respect the lákhiráj of the saint Muhammad Sultán Mahí-suwár's Ástán. The word 'ástán' suggests to me the idea that Mahásthán may after all be a Muhammadan name meaning the Great Ástán. The Hindu name perhaps was Síladwíp. The place is also often called Mastángarh and under this name it appears in the Survey Map. I send a copy of the *Sanad* along with these remarks.* With regard to the resumption-proceedings, noted

* The following is a transcript of the copy of the *Sanad*—

• میر سید سلطان محمود ماہی سوار •

مقرر شد کہ متصدیان مہمات حال و استقبال و چودھریل و قانون گویان
پرگنہ سیلجوس سرکار بازوہا بدانند چون بعضی رسید کہ بموجب فرمان والاہان
واسناد حکام سابق خادمی آستانہ مقدسہ سلطان العارفین حضرت و خارج
جمع مستان گزہ و زمین دریچہ ندی مشمولہ پرگنہ مذکور بسید محمد طاہر و سید
عبد الرحمان و سید محمد رضا با فرزندان بلا مشارکت غیرے مقرر است می باید کہ
مشار الہم را خادم روضہ منورہ دانستہ مستان گزہ و اراضی مسطور را بموسی الہم
وا گذارند کہ در ورثہ خودہا رسیدہ نذر و نیاز آستانہ مقدسہ و واصلات آنرا خرچ
خانقاہ واردان و صادران و صرف معشیت خودہا نمودہ بدعاگوئی دوام دولت
اشتغال میداشتہ باشند • دین باب تدغن دانند • تحریر بتاریخ ۷ شہر جمادی الاول
سنہ ۳۰ جلوس مطابق سنہ ۱۰۹۶ ہجری قلمی شد فقط •

پادشاہ

عالم گیر غازی

کوکلتاش

مظفر جنگ بہادر

by Mr. O'Donnell, I must in justice to our Government observe that no attempt was made to resume the whole tenure. All the land within the garh or fortification (some thousands of bighas apparently) was admitted to belong to the lákhirájdárs. The dispute was only about 300 bighas of chur-land which had formed between Mahásthán proper and the river-channel. The resumption-proceedings, however, must have been rather harassing to the proprietors; for they began in 1824, and did not end till December 1843. Síla Devi's Ghát is in this chur which was sought to be resumed, and this perhaps is enough to show the baselessness of the story about her, for clearly the chur was formed long after Mahásthán was made.

Translation.

It has been ordered that the Mutasaddís of all present and future matters of government, and the Chaudhurís, and Kánúgos of Pargana Sílbaris in Sirkár Bázúhá should bear in mind that, inasmuch as it has come to the knowledge of government that according to the *farmáns* and *sanads*, granted by former rulers, the service of the sacred shrine of the king of saints, Hagarat.....and income of Mastángarh and the land comprised within the bend of the river, in the said Pargana, have been settled on Sayyid Muhammad Táhír and on Sayyid 'Abdur-rahmán and on Sayyid Muhammad Raqá and on their children, without anyone else being a partner, it is necessary that the above-mentioned persons should be looked upon as the servitors of the illuminated shrine, and that they should be left in possession of Mastángarh and of the above described lands, so that the lands may go down to their heirs; that they may perform the vows and prayers as usual at this holy shrine; that they may apply the income to defraying the expenditure of the religious house, on travellers, and on themselves for their own livelihood, so that they may occupy themselves with loyal prayers for the continuance of the present government. Every care is to be taken in this matter.

Written on the 7th Jumáda I, of the 30th year of the present reign, corresponding to the year of the Hijra 1096.

(Signed) Muzaffar Jang Bahádur, foster-brother (*kokultásh*) of 'Alamgír Pádsháh-i-Gházi.

It is impossible to reconcile the particulars given in the sanad copy with historical facts. First, the name should be Muzaffar Husain not Muzaffar Jang. It is possible that the copyist mistook حسین for جنگ. Secondly, Muzaffar Husain Kokultásh (also called Fídái Khán A'zam Kokah, *koka* being the same as *kokultásh*) was governor of Bengal from the middle of 1088 H., [A. D. 1677] i. e., the 20th year of 'Alamgír, to the 9th (or 12th) Rabí II, 1089 (i. e., the 21st year of 'Alamgír), when he died at Dháká.

But the 7th Jumáda I, 1096 [1685, A. D.] falls in the 28th year of 'Alamgír, whose 30th year commences with the 1st Ramazán 1097 [A. D. 1685].

The name of the saint is written at the top instead of in its proper place in the body of the deed, in order to do him honor. This is in accordance with Hindu customs, as may be seen in *sanads* for lands dedicated to an idol.

I could find nothing Buddhist at Mahásthán, and my impression is that Messrs. Westmacott and O'Donnell have been somewhat too ready to believe that Buddhism once prevailed in Bagurá. Bardankúti is a comparatively recent place, and has nothing to do, I think, with the Pandra Varddhana of the Chinese pilgrim. There are two statues at Mahásthán. One appears to be Basudeb (Krishna), and the other is simply a mermaid. It has no theological signification at all, I think, and is just a fantastic figure such as are common in Hindu palaces. The "right hand clenched," referred to by Mr. O'Donnell is, I think, a foot.

One curious remain at Mahásthán is a large brick well with rude stone steps leading down it. The steps are simply large stones jutting out from the brick work and look very awkward things to descend by. However I was told that many persons go down by them at the time of the fair. The well is called the Jiyat-kunḍ, or well of life, and the tradition is, that Parasurám for a long time got the better of Sháh Sultán, because when any Hindu soldier was killed, Parasurám revived him by sprinkling water from this well over him. The sweeper Harpál told Sháh Sultán of this, and then he destroyed the efficacy of the water by throwing pieces of beef into it. The fortification of Mahásthán is quadrangular in shape, and is popularly said to be two miles square. There are four openings in it, and these are pointed out as the gates. One is called the Támár Darwázah, because it is said to have been sheathed with copper. Outside the rampart there is on one side a large lake, called the Kálidohá Ságar. There are islands in it, and a promontory on its banks is called Bish-Mathan, because it is said that on it the goddesses Lutta and Padya mixed the poison which destroyed Chánd Saudágar's family. Chánd Saudágar is, as is well known, the impious merchant who would not worship Manesha, or the Lady of the Snakes. He is said to have lived at Chándmoa, *i. e.*, Chándmukh, near Mahásthán, and the foundations of the house he built for his son are still pointed out.

Another antiquity in Bagurá, the importance of which, however, is a good deal exaggerated by the people, is Jogir Bhaban, or the Ascetic's house. It lies some seven miles west of Bagurá. It appears to have been an early settlement of the Gosáins, or followers of Siva. The remains consist of some temples with elaborately carved wooden doors. One temple has the Bengali date 1089, and the name Meher.Náth Sadak. One of the doors has the date 1119, and the name of Shukhal Náth Gosáin. There is one curious tomb with three monuments of different sizes. The largest is the guru's, the second is the disciple's, and the third and smallest is said to be that of the guru's dog ("his faithful dog shall bear him company"). There is a well of life here, too, but it is quadrangular in shape. The jogí in charge of the temples gave me a curious instance of faith. There are several images inside one temple, and the jogí candidly said that he

could not tell what god one of them represented. However, he said, as it was in the temple he accepted it and worshipped the unknown god. To the west of Jogir Bhaban, there are said to be the remains of the house of the Rájá Salbon (Sáliváhan ?) and to the north of it, the remains of the house of the Rájá Sri Náth. Perhaps they were ancestors of Parasurám.

Returning to Mahásthán, I have to say that Parasurám was evidently a devoted worshipper of Siva. Indeed, he seems to have meditated setting up a rival to Banáras. In and about Mahásthán, there are places called Káshí, Brindában, and Mathurá.

In 1862, or thereabouts, a number of gold coins were found at Bámanpára, near Mahásthán. The most of them have disappeared, but I have seen two, and have sent them to the Asiatic Society for identification. The records of the case which is said to have taken place about them have been destroyed. In 1874, a pot of old rupees was found in the village of Mahásthán by a labourer who was digging a ditch in a pân garden. The owners of the pân garden wrested the coins from him, and were convicted, rather harshly I think, of robbery and sentenced to six months' imprisonment. On appeal, their sentence was reduced to three months. Some of the coins were bought from the owners by Major Hume and were afterwards sent to the Asiatic Society. One coin was lying in the Magistrate's Máلكhánah, and has been sent by me to Professor H. Blochmann.* I have also sent down two other silver coins which are said to have been found at Mahásthán.

* The silver coins were described in Journal, Asiatic Society, Bengal, Part I, for 1875, p. 288. The coins now sent are five in number, viz., 2 gold coins, regarding which Dr. Rájendralála Mitra says :—"One of them, with the lion on the reverse, belongs to Mahendra Gupta, or as given on the margin of the obverse, Sri Mahendra Siñha; and the other to Chandra Gupta. Both have been figured in Thomas's Prinsep. The princes belong to the 2nd and 3rd centuries of the Christian era."

The three silver coins are—(1) a silver *tápkah* of Shams-uddín Ilyás Sháh of Bengal, as published by Thomas in his 'Initial Coinage of Bengal.'

(2.) A silver *tápkah*, struck in 862 H., by Mahmúd Sháh I, of Bengal as figured in this Journal, for 1875, Pl. XI, No. 7. The reverse is the same as in Nos. 5 and 8, but the reading is still doubtful.

(3.) A silver *tápkah* by the same king, of coarse manufacture, similar to Nos. 2 and 3, of Pl. XI, *loc. cit.*



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ERRATA.

Page 114, l. 40, for Plate **XIII** read Plate **XVIII**.

" 117, l. 30, for " 13 " " 15.

" 118, l. 16, " " 13 " " 18.

" 118, l. 31, " " 14 " " 19.

" 118, l. 40, " " 15 " " 20.

" 118, l. 41, " " 13 " " 18.

" 130, l. 9, " " **XIX** " " **XXI**.

For 11 read 14 Plates.

One of my inchoate projects was the compilation of a series of notices illustrating the life and doctrine of the different Vaishnava Reformers of the 16th and 17th centuries, who all made Brindaban their head centre. Though both the men themselves and their writings are scarcely known by name to European Orientalists, they have had an enormous influence on the tendencies of modern Hindu thought, and the sects which they founded still continue to gather converts from all parts of India. To last year's volume of the Society's Journal I contributed an article on Swāmi Hari

JOURNAL

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ASIATIC SOCIETY OF BENGAL.

Part I.—HISTORY, LITERATURE, &c.

No. II.—1878.

Mathurá Notes.—By F. S. GROWSE, M. A. OXON., B. C. S.

(With eleven plates.)

The following scraps from my note-book have been hastily thrown together in the midst of the worry and confusion occasioned by my sudden and most unexpected transfer from a district, to which I had become greatly attached, and where I had confidently hoped to spend with much pleasure to myself and some slight advantage to the public the few years that yet remain of my career in the executive branch of the service. I cannot avoid this personal explanation, as it supplies the only adequate apology for the very unfinished state in which these fragments appear. I had intended to work up several of them into separate articles; but the opportunity of doing this has been denied me, and I have no choice but either to send them as they are, or else allow them to perish amidst the general wreck in which all my household gods are now involved.

1. *Gosáin Hari Vans of Brindaban, and the sect of the Rádhá Vallabhis.*

One of my inchoate projects was the compilation of a series of notices illustrating the life and doctrine of the different Vaishnava Reformers of the 16th and 17th centuries, who all made Brindaban their head centre. Though both the men themselves and their writings are scarcely known by name to European Orientalists, they have had an enormous influence on the tendencies of modern Hindu thought, and the sects which they founded still continue to gather converts from all parts of India. To last year's volume of the Society's Journal I contributed an article on Swámi Hari

Dás and his descendants, the Gosains of the temple of Bánke Bihári; and in the Introduction to the first Book of my translation of the *Rámáyana* I have given an account of Tulsi Dás, which I had intended to supplement, on the completion of the poem, with a disquisition on his theological system. But both translation and disquisition must now be indefinitely postponed; for a certain amount of quiet and composure is necessary for the adequate performance of so long and laborious an undertaking. I was under the impression that such a series, however dull and occasionally repulsive the separate articles might be, would still be of interest to the student and supply sound material, out of which to construct one short chapter at least in the great book of the future, the *History of Comparative Religion*. This project however is very summarily disposed of, since it is only at Mathurá that MSS. are obtainable, nor would the Gosáins communicate them to any one, in whom they had not by long intercourse acquired confidence: so suspicious are they of European interference. The language moreover in which the poems are written is not without difficulty and requires some special study, even on the part of natives, before it is readily intelligible. These are probably the reasons why Prof. Wilson in his 'Religious Sects', is able to give very full and accurate accounts of the great teachers of earlier times, who wrote in Sanskrit, while his notices of the more modern schools are meagre and apparently, as a rule, not derived from original sources. Thus, though he devotes five pages to the Rádhá Vallabhis, he does not mention the name even of the Chaurási Pada, which is their great authority, and to illustrate their doctrine, translates a passage from the *Brahma Vaivarta Purána*, which is rather the standard of the Vallabhacháris, a different sect, who have their head quarters at Gokul.

The founder of the Rádhá Vallabhis was by name Hari Vans. His father, Vyása, was a Gaur Bráhmaṇ of Deva-ban in the Saháranpur district, who had long been childless. He was in the service of the Emperor and on one occasion was attending him on the march from Agra, when at last his wife Tára gave birth to a son at the little village of Bád, near Mathurá, in the *sambat* year 1559. In grateful recognition of their answered prayers, the parents named the child after the god they had invoked, and called him Hari Vans, *i. e.*, Hari's issue. When he had grown up, he took to himself a wife, by name Rukmini, and had by her two sons and one daughter. Of the sons the elder, Mohan Chand, died childless; the descendants of the younger, Gopináth, are still at Deva-ban. After settling his daughter in marriage he determined to abandon the world and lead the life of an ascetic. With this resolution he set out alone on the road to Brindaban, and had reached Charthával, near Hodal, when there met him a Bráhmaṇ, who presented him with his two daughters and insisted upon his marrying them, on the strength of a divine command, which he said he had received

in a vision. He further gave him an image of Krishna with the title of Rádha Vallabh, which on his arrival at Brindaban was set up by Hari Vans in a temple that he founded between the Jugal and the Koliya Gháts on the bank of the Jamuná. Originally he had belonged to the Mádhváchárya Sampradaya and from them and the Nimbáraká, who also claim him, his doctrine and ritual were professedly derived. But in consequence of the mysterious incident, by which he had been induced to forego his intention of leading a celibate life and take to himself two new wives; or rather in consequence of his strong natural passions, which he was unable to suppress and therefore invented a fiction to excuse, his devotion was all directed not to Krishna himself, except in a very secondary degree, but to his fabled mistress Rádhá, whom he deified as the goddess of lust. So abominable a system was naturally viewed at first with no little amazement, as is clear from the language of the Bhakt Málá, which is as follows :

॥ मूल ॥

श्रीहरिवंसगुसाईभजनकी रीति सहज कोऊ जानि है ॥

श्रीराधाचरणप्रधान चढ़ै अति सुदृढ़ उपासी ।

कुंजकेलि दंपति तहांकी करत बसासी ॥

सर्वसुमहाप्रसाद प्रसिधिताके अधिकारी ।

विधि निषेध नहि दास अनन्य उत्कट व्रतधारी ॥

श्रीव्यासमुवन पथ अनुसरै सोई भलै पहिचानि है ।

श्रीहरिवंसगुसाईभजनकी रीति सहज कोऊ जानि है ॥

Translation of the text of Nábha Ji.

"The Gosáin Sri Hari Vans : who can understand all at once his method of devotion ? with whom the feet of blessed Rádhá were the highest object of worship ; a most staunch-souled devotee ; who made himself the page in waiting on the divine pair in their bower of love ; who gloried in the enjoyment of the remnants of all that was offered at their shrine ; a servant who never pleaded obligation or dispensation ; a votary of incomparable zeal. Account him blessed who follows in the path of Vyása's great son, the Gosáin Sri Hari Vans : who can understand all at once his method of devotion ?"

In the gloss, or supplement of Priya Dás, the same sentiment is expanded and a reference made to the legend of the Bráhmaṇ and his two daughters.

॥ टोका ॥

श्रीजूकी रीति कोऊ लाषनिमें एक जानें
 राधाई प्रधान मानें पाछें कृष्ण ध्याइये ।
 निपट विकट भाव होत न सुभाव सैसौ
 उनहीकी कृपादृष्टि नैकुकिहं पाईये ॥
 विधि औ निषेध छेद डारे प्राणप्यारे हियें
 जियें निज दास निस दिन वहै गाईये ।
 सुषद चरित्त सब रसिक विचित्र नीकें
 जानत प्रसिद्ध कहा कहिकै सुगाईये ॥
 आये यह त्यागि राग बन्धौ प्रिया प्रीतम से
 विप्र वडभाग हरिआज्ञा दई जानियें ।
 तेरी उभय सुता व्याहदेवो लेवो नाम मेरो
 उनको जो वंस प्रसंस जग मानियें ॥
 ताही द्वार सेवा विस्तार निज भगतनिकी
 अगतनिकी गति से प्रसिद्ध पहिचानियें ।
 मांनि प्रिय बात यह गह्यो सुष लह्यो सब
 कह्यो कैसे जात यह मनमें न आनियें ॥
 राधिकावल्लभलाल आज्ञा से रसाल दई
 सेवा मो प्रकास ओ विलास कुंजधामको ।
 सोई विस्तार सुषसार दृगरूप पियो
 दियो रसिक जिन लियो पछि वामको ॥
 निसि दिन गांन रस माधुरीको पान उर
 अंतर सिहांन एक काम खामाखामको ।

गुन वो अनूप कहि कैसेंके सरूप कहें
 लहे मन मोद जैसे ओर नही नामको ॥

Translation.

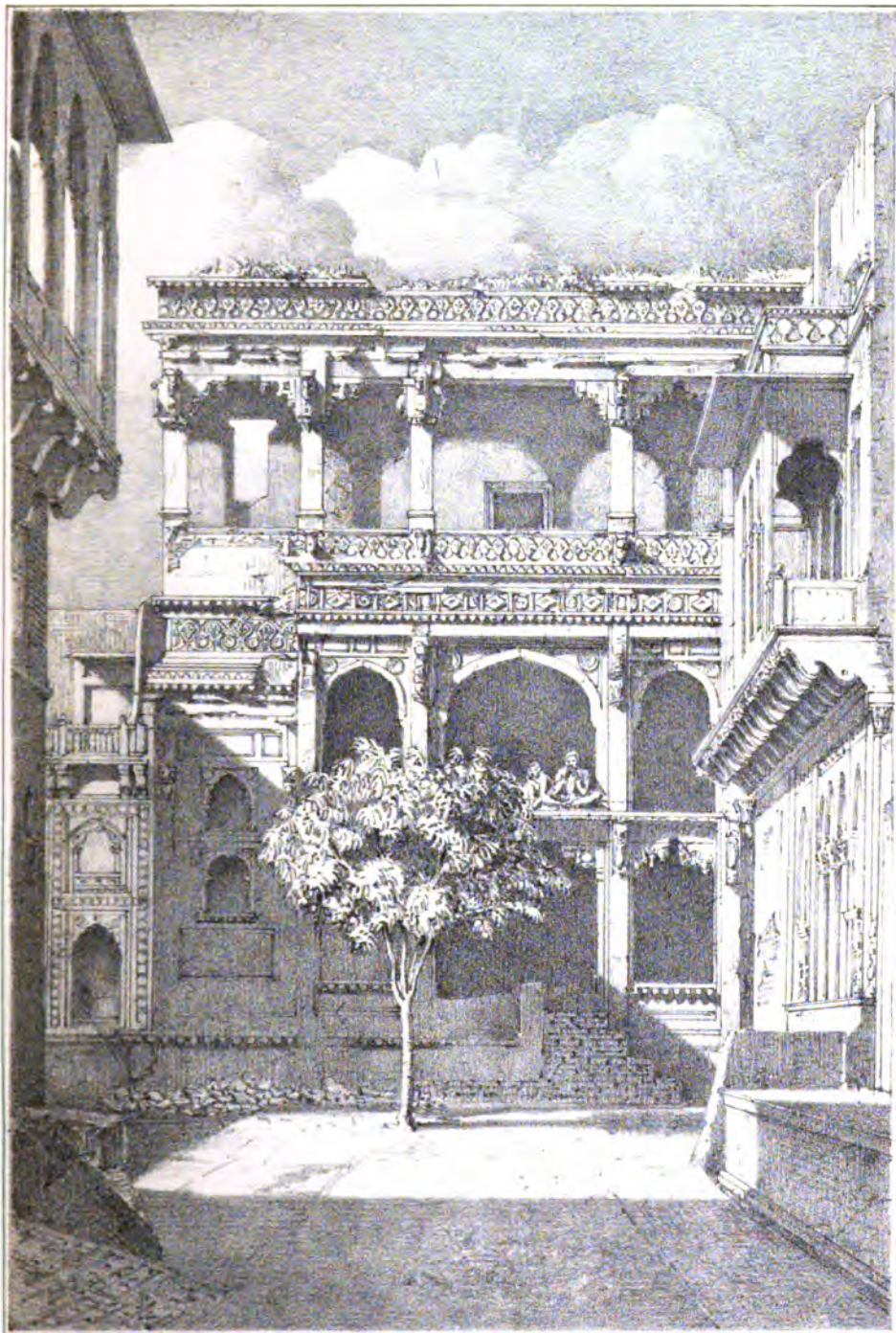
"Would you know the one point in a thousand of Sri Hit Ji's ways? he adored Rádhá first and after her Krishna. A most strange and unnatural fashion, that none could even faintly comprehend save by his favour. He obliterated all distinction between obligation and dispensation; his Beloved was in his heart; he lived only as her servant, singing the praises of the divinity night and day. All the faithful know his many edifying and holy actions; why tell and repeat them since they are famous already.

"He left his home and came; his passion for Rádhá and Krishna had so grown: but you must know Hari had given an order to a wealthy Bráhmaṇ: 'Bestow your two daughters in marriage, taking my name, and know that their issue shall be famous throughout the world. By their means my worship shall spread among my faithful people, a path for the pathless, of high renown.' Obedient to the loving order he went home; the delight of all was past telling, for it was more than the mind could even conceive. Rádhá's dear spouse gave the gracious command: 'Publish abroad my worship and the delights of my sylvan abode.' He drank in with his very eyes the essence of bliss and gave it to every client who supported the cause of the female divinity. Night and day imbibing the honeyed draught of sweet song and cherishing it in his soul, with no thought but for Syámá and Syám. How is it possible to declare such incomparable merit? the soul is enraptured at the sound more than at that of any other name."

By his later wives he had two sons Ban Chand and Kishan Chand, of whom the latter built a temple to Rádhá Mohan, which is still in the possession of his descendants. The former was the ancestor of the present Gosáins of the temple of Rádhá Vallabh, the chief shrine of the sect. This was built by one of his disciples, a Káyath named Sundar Dás who held the appointment of Treasurer at Delhi. One of the pillars in the front gives the date as *sambat* 1683. An earlier inscription, of 1641, was noticed by Prof. Wilson, but this would seem to have been over the gateway leading into the outer court, which since then has fallen down and been removed. The temple is in itself a handsome building and is further of special architectural interest as the last example of the early eclectic style. The ground plan is much the same as in the temple of Haridev at Gobardhan (described in my *Mathurá Memoir*, Part I, page 172) and the work is of the same character, but carried out on a larger scale. The nave has an eastern façade, 34 feet broad which, as will be seen from the accom-

panying photograph, is in three stages, the upper and lower Hindu, and the one between them purely Muhammadan in character. The interior is a fine vaulted hall (63 ft. \times 20 ft.) with a double tier of openings north and south; those in the lower story having brackets and architraves and those above being Muhammadan arches, as in the middle story of the front. These latter open into a narrow gallery with small clerestory windows looking on to the street. Below, the three centre bays of the colonnade are open doorways, and the two at either end are occupied by the staircase that leads to the upper gallery. Some of the carved panels of the stone ceiling have fallen; but the outer roof, a steep gable, also of stone, is as yet perfect. Some trees however have taken root between the slabs and unless carefully removed must eventually destroy it. The actual shrine, or *cella*, as also at the temple of Gobind Deva, was demolished by Aurangzeb and only the plinth remains, upon which a room has been built, which is used as a kitchen. As no mosque was ever erected at Brindaban, it is not a little strange that Mr. Fergusson in his History of Indian architecture, when speaking of this very locality, should venture to say "It does not appear proven that the Moslems did wantonly throw down the temples of the Hindus, except when they wanted the materials for the erection of mosques or other buildings." A thorough repair of roof, eaves and east front would cost Rs. 4,500, and as a typical example of architecture, the building is worth the outlay. A modern temple has been erected on the south side, and the nave of the old fabric has long been entirely disused. In fact this is the last temple in the neighbourhood in which a nave was built at all. In the modern style it is so completely obsolete that its distinctive name even is forgotten. On the opposite side of the street is a monument to the founder, which however the present generation of Gosáins are too ungrateful to keep in repair. They are the descendants of Braj Chand's four sons, Sundar-Bar, Rádha Ballabh Dás, Braj-Bhúkhan and Nagar Bar Ji; and the heads of the four families so derived are now Daya Lál, Manohar Ballabh, Sundar Lál and the infant son of Kanhaiya Lál.

Hari Vans was himself the author of two poems; the one, the *Chaurási Pada*, or '84 Stanzas,' in Hindi, the other the *Rádha Sudhá Nidhi*, or 'Treasury of Rádha's Delights,' in 170 Sanskrit couplets. The latter, though not much read, is held in great esteem and, regarded solely as a piece of highly impassioned erotic verse, it is a spirited and poetic composition. There is a good Hindi commentary upon it by one Bansidhar, dated *sambat* 1820. It is written in a very florid style and its interminable compounds, to be rendered into intelligible English, would require a greater expenditure of time and thought than I can now bestow upon them. But as MSS. are scarce and Sanskritists may like to see a specimen of the text, I subjoin the first 25 and the last couplet in the original.



S. Sadgfield. Lith.

Calcutta.

TEMPLE OF RĀDHĀ BĀLLABH
PURĪ, RĀJ.

अथ राधासुधानिधिलिख्यते ॥

॥ श्लोकः ॥

यस्याः कदापि वसनाञ्जलिलेनोत्थधन्यानिधन्यपवनेन कृतार्थमानी ।
 योगीन्द्रदुर्गमगतिर्मधुसूदनोऽपि तस्या नमोऽस्तु दृषभानुभुवो दिग्भेऽपि ॥ १ ॥
 ब्रह्मेश्वरादिसुदुर्दृष्टपदारविन्दश्रीमत्परागपरमाहुतवैभवायाः ।
 सर्वार्थसारसर्वविघ्नपाद्रुदृष्टेस्तस्या नमोऽस्तु दृषभानुभुवो महिम्ने ॥ २ ॥
 यो ब्रह्मसूत्रद्रुक्कनारदभीमसुखैरालङ्कितो न सहस्य पुरुषस्य तस्य ।
 सद्योवशीकरणचूर्णमनन्तशक्तिं तं राधिकाचरणरेणुमहं स्मरामि ॥ ३ ॥
 आधाय मूर्ध्नि यदापुद्गदारगोप्यः कान्धं पदं प्रियगुणैरपि पिच्छमौलेः ।
 भावोत्सवेन भजतां रसकामधेनुं तं राधिकाचरणरेणुमहं स्मरामि ॥ ४ ॥
 दिव्यप्रमोदरससारनिजाङ्गसङ्गपीयूषवीचिनिचयैरभिषेचयन्ती ।
 कन्दर्पकोटिसरमूर्च्छितनन्दस्रगुसञ्जीविनी जयति कापि निःकुञ्जदेवी ॥ ५ ॥
 तस्यः प्रतिक्षणचमत्कृतपादसीसाखावष्टमोदममहामधुराङ्गभङ्गि ।
 राधाननं हि मधुराङ्गकलानिधानमाविर्भविष्यति कदा रससिन्धुसारम् ॥ ६ ॥
 यत्किङ्करीषु वज्रघ्नः खलु काकुवाणी नित्यं परस्य पुरुषस्य त्रिषण्डमौलेः ।
 तस्याः कदा रसनिधेर्दृषभानुजायास्तत्केलिकुञ्जभवनाङ्गनमार्जनी स्याम् ॥ ७ ॥
 वृन्दाजि सर्वमहतामपहाय दूराद्वृन्दाटवीमनुसर प्रणयेन चेतः ।
 सन्तारणीकृतसुभावसुधारसौधं राधाभिधानमिह दिव्यनिधानमस्ति ॥ ८ ॥
 केनापि नागरवरेण पदे निपत्य सम्प्रार्थितेकपरिरक्षरसोत्सवायाः ।
 सभूविभङ्गमतिरङ्गनिधेः कदा ते श्रीराधिके नहि नहीति गिरः शृण्वोमि ॥ ९ ॥
 यत्पादपद्मनखचन्द्रमणिच्छटाया विस्फूर्जितं किमपि गोपवधूस्वदर्शि ।
 पूर्णानुरागरससागरसारमूर्तिः सा राधिका मयि कदापि हृत्पां करोतु ॥ १० ॥
 सङ्ख्यभमानरसवारिनिधेश्वरङ्गैरङ्गैरिव प्रणयसोत्सविसोत्सवायाः ।

तस्याः कदागु भविता मयि पुण्यदृष्टिर्वृन्दाटवीनवनिकुञ्जमहाधिदेव्याः ॥ ११ ॥

वृन्दावनेश्वरि तवैव पदारविन्दं प्रेमावृतैकमकरन्दरसौघपूर्णं ।

हृद्यर्पितं मधुपतेः स्मरतापमुयं निर्वापयत्परमश्रीतलमाश्रयामि ॥ १२ ॥

राधाकरावचितपल्लववल्लीके राधापदाङ्गविलसन्मधुरखलीके ।

राधायशोमुखरमन्तखगावलीके राधाविहारविपिने रमतां मनो मे ॥ १३ ॥

कृष्णामृतं चक्षुः विगाढुमितीरिताहं तावत्सहस्र रजनी सखि यावदेति ।

इत्थं विहस्य दृषभानुसुते हि लस्ये मानं कदा रसदकेलिकदम्बजातं ॥ १४ ॥

पादाङ्गुलीनिहितदृष्टिमपचपिणुं दूरादुदीक्ष्य रसिकेन्द्रमुखेन्दुविम्बं ।

वीक्षे चक्षुःपदगतिं चरिताभिरामां झङ्कारनूपुरवतीं वत कर्हि राधाम् ॥ १५ ॥

उज्जागरं रसिकनागरसङ्गरङ्गैः कुञ्जोदरे कृतवती नु सुदारजन्याम् ।

सुखापिता हि मधुनैव सुभोजिता त्वं राधे कदा स्वपिषि मत्करलालिताङ्गि ॥ १६ ॥

वैदग्ध्यसिन्धुरनुरागरसैकसिन्धुर्वात्सल्यसिन्धुरतिसान्द्रकपैकसिन्धुः ।

सावण्यसिन्धुरमृच्छविरूपसिन्धुः श्रीराधिका स्फुरतु मे हृदि केलिसिन्धुः ॥ १७ ॥

दृष्ट्वैव चम्पकलतेव चमत्कृताङ्गी वेणुध्वनिं क्व च निगम्य च विह्वलाङ्गी ।

सा श्यामसुन्दरगुणैरनुगीयमानैः प्रीता परिव्यजतु मां दृषभानुपुत्री ॥ १८ ॥

श्रीराधिके सुरतरङ्गिणितम्बभागे काञ्चीकलापकलहंसकलानुलापैः ।

मञ्जीरसिञ्चितमधुव्रतगुञ्जिताङ्गिपङ्केरुहैः शिभिरयस्त्र रसच्छटाभिः ॥ १९ ॥

श्रीराधिके सुरतरङ्गिणिदिव्यकेलिकल्लोलमालिनि लसद्ददगारविन्दे ।

श्यामामृताम्बुनिधिसङ्गमतीव्रवेगिन्यावर्त्तनाभिहृदिरे मम सन्निधेहि ॥ २० ॥

सत्प्रेमसिन्धुमकरन्दरसौघधारासारानजस्रमभितः स्त्रवदाश्रितेषु ।

श्रीराधिके तव कदा चरणारविन्दगोविन्दजीवनधनं शिरसा वहामि ॥ २१ ॥

सङ्केतकुञ्जमगु कुञ्जरमन्दगामिन्यादाय दिव्यमृदुचन्दनगन्धमाल्यम् ।

त्वां कामकेलिरभसेन कदा चक्षणीं राधे नु यामि पदवीमुपदर्शयन्ती ॥ २२ ॥

गत्वा कलिन्दतनयाविजनावतारमुद्धर्त्तयन्धृतमङ्गमनङ्गजीवम् ।
 श्रीराधिके तव कदा गवनागरेन्द्रं पश्यामि मग्नयनं स्मितमुखनीपे ॥ २३ ॥
 सत्प्रेमरात्रिसरसो विकसत्सरोजं खानन्दसिन्धुरससिन्धुविवर्द्धनेन्दुम् ।
 तच्छ्रीमुखं कुटिलकुलसम्पङ्गुष्टं श्रीराधिके तव कदा नु विलोकयिष्ये ॥ २४ ॥
 सावत्सरारससारमुखैकसारे कारुष्यसारमधुरच्छविस्वरूपसारे ।
 वैदग्ध्यसाररतिकेलिविस्वाससारे राधाभिधे मम मनोऽखिलसारसारे ॥ २५ ॥
 अहुतागन्दलोभस्येन्नासा रससुधानिधिः ।
 स्वोऽयं कर्णकलशैर्दृष्टीत्वा पीयतां बुधाः ॥ १७० ॥

इति श्रीवृन्दावनेश्वरीचरणरूपामाचविजृम्भितश्रीद्वितहरिवंशगोस्वामिना
 विरचिता श्रीराधारससुधानिधिः सम्पूर्णम् ॥०॥

The Hindi poem, the *Ohaurási Pada*, is much more popular and most of the Gossáins know at least some of its stanzas by heart. There is a commentary upon it by Lok-náth, dated *sambat* 1855, and another in verse, called the *Bahasya artha-nirúpana* by Rasik Lál, written in *sambat* 1734. Neither of the two, however, is of much assistance to the student; all the simple passages being paraphrased with wearisome prolixity, while real difficulties are generally skipped. I subjoin the text and a translation of the first 12 stanzas.

अथ श्रीद्वितहरिवंशस्तववाणो लिख्यते ॥

राग विभास ॥

॥ १ ॥

जोद जोर प्यारौ करै सोई मोहि भावै
 भावै मोहि जोई सोई सोई करै प्यारे ।
 मोकौ तो भावती ठौर प्यारेके नैननि मै
 प्यारौ भयो चाहै मेरे नैननिके तारे ॥
 मेरै तौ तन मनप्राणहं तैं प्रीतम प्रिय

अपने कौटिक प्राण प्रीतम मोसौँ हारे ।
 जै श्रीहितहरिवंश हंसहंसिनी बाँवस गौर
 कहौ कौन करे अक्षतरंगनि न्यारे ॥

॥ २ ॥

प्यारे बोली भामिनी आजु नीकी जामिनी भेट गवीन मेघसौँ दामिनी ॥
 मोहन रसिकरास री मारि तासौँ जु मानु करै चैसी कौन कामिनी ॥
 जै श्रीहितहरिवंश अवन सुनत प्यारी राधिका रवसौँ मिली गजगामिनी ॥

॥ ३ ॥

प्रातःसमै दोऊ रस लंपट सुरत जुहु जैजुत अतिफूल ।
 अमवारिज घन विंदु वदनपर भूषण अंगहि अंग विकूल ॥
 कहु रसो तिलक सिधल अलकावलि वदनकमल मानौँ अलिभूल ।
 जै श्रीहितहरिवंश मदनरंग रंगि रहे मैँन वैँन कटि सिधल दुकूल ॥

॥ ४ ॥

आजु तो जुवती तेरौ वदन आनंद भर्यौ पियके संगमके सूखत सुषसैँन ।
 आलस वलित बोल सुरंगरंगे कपोल विथकित अरुण उनीदे दोऊ मैँन ॥
 हसिर तिलक लेस किरत कुसम केस सिर सीमंत भूषित मानौँ तैँन ।
 करुणा करि उदार रासत कहु न सार दसन वसन लागत जव दैँन ॥
 काहेकौँ दुरति भीर पलटे प्रीतम चीर वसकिये ख्याम सिधैँ सत मैँन ।
 गलित उरसि माल सिधल किंकिनीजाल जै श्रीहितहरिवंश सतागट्ट सैन ॥

॥ ५ ॥

आजु प्रभात सतामंदिरमैँ सुष वरसत अति हरष जुबल वर ।
 गौरख्याम अभिराम रंगरंगभरे लटक लटक पन धरत अनजि पर ॥
 कुच कुमकुम रंजित माखावलि सुरतनाथ श्रीखाम धामधर ।

प्रया प्रेमके अंक अलंकृत चिह्नत चतुरसिरोमणि निजु कर ।
 दंपति अति अनुराग सुदित कल गान करत मन हरत परस्पर ॥
 जै श्रीहितहरिवंश प्रसंस परायण माइन अलि सुर देत मधुरतर ॥

॥ ६ ॥

कौन चतुर जुवती प्रिया जाहि मिलत लाल चोरकै रैन ।
 दुरवति कौंच दुरै सुनि प्यारे रंगमै गहलै सैनमै नैन ॥
 छर नवसंद विराने प्रट अटपटेसे बैन ।
 जै श्रीहितहरिवंश रसिक राधापति प्रमथित नैन ॥

॥ ७ ॥

राग विष्णुबल ॥

आजु निकुंजमंजुमै घेलत नवलकिशोर नवीन किशोरी ।
 अति अनुपम अनुराग परस्पर सुनि अभूत भूतल पर जोरी ॥
 विद्रुम फटिक विविधि निर्मित धर नवकर्पूरपराम न थोरी ।
 कोमल किशलय सैन सुपेसल तापर लाम निवेसित गोरी ॥
 मिथुन हासि परिहासि परायण पीक कपोल कमल पर सोरी ।
 गौर लाम भुज कलह मनोहर गीवी वधन मोचत जोरी ॥
 हरिहर सुकर विलोकि अपुनपौ विभ्रम विकल मानजुत भोरी ।
 चिनुक सुचार प्रलोद प्रबोधित पिय प्रतिविंव जनाइ निहोरी ॥
 नेति नेति वषणामृत सुनि सुनि ललितादिक देखत दुरिचोरी ॥
 जै श्रीहितहरिवंश करत करधूनन प्रनय कोप मालावलि तोरी ॥

॥ ८ ॥

अतिहंसी अरुण तेरे नैन मलिन री ।
 अलमजुत इतरात रगमगे भए निसिजागर मघिन मलिन री ॥

सिथल पलकमैं छठत गोखकगति विधयौ मोहन मृग सकत खलि न री ।
जै श्रीहितहरिवंश हंसकलनामिन संभ्रम देत भँवरिनी अलीन री ॥

॥ ९ ॥

वनी राधा मोहनकी जेरी ।
इंद्रनीलमणि खाम मनोहर सातकुंभ तन गोरी ॥
भास विसाल तिलक हरि कामिनि चिकुरचंद विचरोरी ।
गज नाइक प्रभु चाल गंधदनि नति दृषभानु किशोरी ॥
नील निषोल जुवति मोहन पटपीत अरुण सिर धोरी ।
जै श्रीहितहरिवंश रसिक राधापति सु रत रग मैं धोरी ॥

॥ १० ॥

आजु नागरीकिशोर भँवती विधिष जेह
कहा कहौ अंग अंग परममाधुरी ।
करत केलि कंठ मेलि वाज्जदंड गंड गंड
परस सरस राससास मंडली जुरी ॥
खामसुंदरी विहार वाँसुरी मृदंग तार
मधुर घोष नूपुरादि किंकिनी पुरी ।
जै श्री देषति हरिवंश आलि निर्तेनी सुगंध चालि
वारि फेरिदेति प्राण देह सौं दुरी ॥

॥ ११ ॥

मंजुल कल कुंजदेस राधाहरि विशदवेस
राकानभ कुमदबंधु भरद जामिनी ।
खामसुदति कनकअंग विहरत मिलि एकसंग
नीरद मनी नील मध्य खसत दामिनी ॥

अह्न पीत नव दुकूल अनुपम अनुरागमूल
 सौरभजुत सीत अनिल मंदगामिनी ।
 किञ्चलयदस्तरचित सैन वोस्त पिय चाटु वै न
 मान सद्धि प्रतिपद प्रतिकूल कामिनी ॥
 मोहनमन मथत मार परसत कुच नीवी हार
 वेपथजुत नेति नेति वदत भामिनी ।
 गरवाहन प्रभुसुकेलि वड विधि भर भरत झेलि
 सौरतरसरूपनदी जगतपावनी ॥

॥ १२ ॥

सखि राधिके सुजान तेरे हित सुषनिधान
 रासु रथो खाम तट कलिंदनंदिनी ।
 निर्गत जुगवतीसमूह रागरंग अतिकटह
 वाजत रसमूल मुरलिका अनंदिनी ॥
 वंसीवट निकट जहां परमरमणभुमि तहां
 सकलसुषद मलय वहै वायु मंदिनी ।
 जाती ईषदविकास कानन अतिसय सुवास
 राकानिस सरदमास विमल चांदिनी ॥
 गरवाहन प्रभु निहार खोषनभरि घोषगारि
 नयसिष सौंदर्य काम दुषनिकंदिनी ।
 विससड भुज सीव भेलि भामिनि सुषसिंधु झेलि
 नव निकुंज खाम केलि जगतवंदिनी ॥

Translation of the first twelve Stanzas of the Chaurāsī Pada.

I. "Whatever my Beloved doeth is pleasing to me; and whatever is pleasing to me, that my Beloved doeth. The place where I would be is in my Beloved's eyes; and my Beloved would fain be the apple of my eyes.

My Love is dearer to me than body, soul, or life ; and my Love would lose a thousand lives for me. Rejoice, Sri Hit Hari Vans ! the loving pair, one dark, one fair, are like two cygnets ; tell me who can separate wave from water ?*

II. "O my Beloved, has the fair spoken ? this is surely a beautiful night ; the lightning is folded in the lusty cloud's embrace. O friend, where is the woman who could quarrel with so exquisite a prince of gallants ? Rejoice, Sri Hit Hari Vans ! dear Rádhiká hearkened with her ears and with voluptuous emotion joined in love's delights.†

III. "At day-break the wanton pair, crowned with victory in love's conflict, were all exuberant. On her face are frequent beads of labour's dew, and all the adornments of her person are in disarray, the paint-spot on her brow is all but effaced by heat, and the straggling curls upon her lotus face resemble roaming bees. (Rejoice, Sri Hit Hari Vans !) her eyes are red with love's colours and her voice and loins feeble and relaxed.

IV. "Your face, fair dame, to-day is full of joy, betokening your happiness and delight in the intercourse with your Beloved. Your voice is languid and tremulous, your cheeks aflame, and both your weary eyes are red with sleeplessness ; your pretty *tilak* half effaced, the flowers on your head faded, and the parting of your hair as if you had never made it at all. The Bountiful one of his grace refused you no boon, as you coyly took the hem of your robe between your teeth. Why shrink away so demurely ? you have changed clothes with your Beloved, and the dark-hued swain has subdued you as completely as though he had been tutored by a hundred Loves. The garland on his breast is faded, the clasp of his waist-belt loose (Rejoice, Sri Hit Hari Vans !) as he comes from his couch in the bower.

V. "To-day at dawn there was a shower of rapture in the bower, where the happy pair were delighting themselves, one dark, one fair, bright with all gay colours, as she tripped with dainty foot upon the floor. Great Syám, the glorious lord of love, had his flower wreath stained with the saffron dye of her breasts, and was embellished with the scratches of his darling's nails ; she too was marked by the hands of her jewel of lovers. The happy pair in an ecstasy of affection make sweet song, stealing each other's heart (Rejoice, Sri Hit Hari Vans !) the bard is fain to praise, but the drone of a bee is as good as his ineffectual rhyme.

* That is to say : it is nothing strange that Rádhá and Krishna should take such mutual delight in one another, since they are in fact one and are as inseparable as a wave and the water of which the wave is composed.

† The first line is a question put to Krishna by one of Rádhá's maids, asking him if her mistress had promised him an interview. The second line is a remark which she turns and makes to one of her own companions.

VI. "Who so clever, pretty damsel, whom her lover comes to meet, stealing through the night? Why shrink so coyly at my words? Your eyes are suffused and red with love's excitement, your bosom is marked with his nails, you are dressed in his clothes, and your voice is tremulous. (Rejoice, Sri Hit Hari Vans!) Rád'há's amorous lord has been mad with love.

VII. "To-day the lusty swain and blooming dame are sporting in their pleasant bower. O list! great and incomparable is the mutual affection of the happy pair, on the heavenly* plain of Brindaban. The ground gleams bright with coral and crystal and there is a strong odour of camphor. A dainty couch of soft leaves is spread, on which the dark groom and his fair bride recline, intent upon the joys and delights of dalliance, their lotus cheeks stained with red streaks of betel juice. There is a charming struggle between dark hands and fair to loose the string that binds her skirt. Beholding herself as in a mirror in the necklace on Hari's breast, the silly girl is troubled by delusion and begins to fret, till her lover wagging his pretty chin shews her that she has been looking only at her own shadow. Listening to her honeyed voice, as again and again she cries 'Nay, nay,' Lalitá and the others take a furtive peep (Rejoice, Sri Hit Hari Vans!) till tossing her hands in affected passion she snaps his jewelled necklet.

VIII. "Ah, red indeed are your lotus eyes, lazily languishing and inflamed by night-long watch, and their collyrium all faded. From your drooping eyelids shoots a glance like a bolt, that strikes your swain as it were a deer and he cannot stir. (Rejoice, Sri Hit Hari Vans!) O damsel voluptuous in motion as the swan, your eyes deceive even the wasps and bees.

IX. "Rád'há and Mohan are such a dainty pair, he dark and beautiful as the sapphire, she with body of golden lustre; Hari with a *tilak* on his broad forehead and the fair with a *rolí* streak amidst the tresses of her hair: the lord like a stately elephant in gait and the daughter of Vrishabhánu like an elephant queen: the damsel in a blue vesture and Mohan in yellow with a red *khour* on his forehead (Rejoice, Sri Hit Hari Vans!) Rád'há's amorous lord is dyed deep with love's colours.

X. "To-day the damsel and her swain take delight in novel ways. What can I say? they are altogether exquisite in every limb; sporting together with arms about each other's neck and cheek to cheek, by such delicious contact making a circle of wanton delight. As they dance, the dark swain and the fair damsel, pipe and drum and cymbal blend in sweet concert with the tinkling of the bangles on her wrists and ankles and the girdle round her waist. Sri Hit Hari Vans, rejoicing at the sight of the damsels' dancing and their measured paces, tears his soul from his body and lays them both at their feet.

* *Abhút*, not created, self-produced, divine.

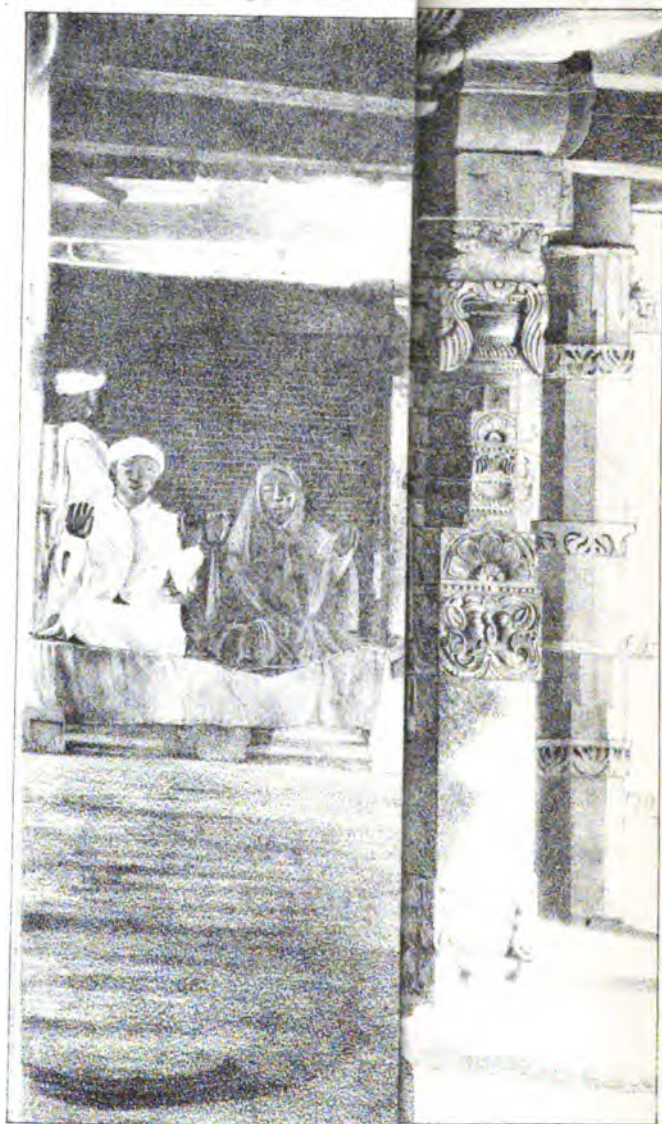
XI. "The pavilion is a bright and charming spot; Rádhá and Hari are in glistening attire and the full-orbed autumnal moon is resplendent in the heaven. The dark-hued swain and nymph of golden sheen, as they toy together, shew like the lightning's flash and sombre cloud. In saffron vesture he and she in scarlet; their affection deep beyond compare; and the air, cool, soft and laden with perfumes. Their couch is made of leaves and blossoms and he woos her in dulcet tones, while coyly the fair one repulses his every advance. Love tortures Mohan's soul, as he touches her bosom, or waist-band, or wreath, and timorously she cries 'off off.' Pleasant is the sporting of the glorious lord, close-locked in oft-repeated embrace, and like an earth-reviving river is the flood of his passion.

XII. "Come Rádhá, you knowing one, your paragon of lovers has started a dance on the bank of the Jamuna's stream. Bebies of damsels are dancing in all the abandonment of delight; the joyous pipe gives forth a stirring sound. Near the Bansi-baṭ, a sweetly pretty spot, where the spicy air breathes with delicious softness, where the half-opened jasmine fills the world with overpowering fragrance, beneath the clear radiance of the autumnal full moon, the milkmaids with raptured eyes are gazing on your glorious lord, all beautiful from head to foot, quick to remove love's every pain. Put your arms about his neck, fair dame, pride of the world, and lapped in the bosom of the Ocean of delight, disport yourself with Syám in his blooming bower."

If ever the language of the brothel was borrowed for temple use it has been so here. But, strange to say, the Gosáins, who accept as their Gospel these nauseous ravings of a morbid imagination, are for the most part highly respectable married men, who contrast rather favourably both in sobriety of life and intellectual acquirements with the professors of rival sects that are based on more reputable authorities. Several of them have a good knowledge of literary Hindi: but their proficiency in Sanskrit is not very high: the best informed among them being unable to resolve into its constituent elements and explain the not very recondite compound *suduráha*, which will be found in the second stanza of the Rádhá-sudhá.

To indicate the fervour of his passionate love for his divine mistress, Hari Vans assumed the title of Hit Ji and is popularly better known by this name than by the one which he received from his parents. His most famous disciple was Vyás Ji of Orchha, of whom various legends are reported. On his first visit to the Swámi he found him busy cooking, but at once propounded some knotty theological problem. The sage without any hesitation solved the difficulty, but first threw away the whole of the food he had prepared, with the remark that no man could attend properly to two things at once. Vyás was so struck by this procedure that he then and there enrolled himself as his disciple, and in a short space of time conceived





such an affection for Brindaban that he was most reluctant to leave it, even to return to his wife and children. At last, however, he forced himself to go, but had not been with them long before he determined that they should themselves disown him, and accordingly he one day in their presence took and eat some food from a Bhāngi's hand. After this act of social excommunication he was allowed to return to Brindaban, where he spent the remainder of his life and where his *samādāh*, or tomb, is still to be seen.

Another disciple, Dhruva Dās, was a voluminous writer and composed as many as 42 poems, of which the following is a list: 1, Jīv-dasā; 2, Baid-gyān; 3, Man-siksha; 4, Brindaban-sat; 5, Bhakt-nāmāvali; 6, Brihad-bāman Purān; 7, Khyāl Hulās; 8, Siddhānt Bichār; 9, Prīti-chovani; 10, Anandashtak; 11, Bhajanāshtak; 12, Bhajan-kundaliya; 13, Bhajan-sat; 14, Sringār-sat; 15, Man-sringār; 16, Hit-sringār; 17, Sabha-mandal; 18, Ras-muktāvali; 19, Ras-hirāvali; 20, Ras-ratnāvali; 21, Premāvali; 22, Sri Priyā Jī ki nāmāvali; 23, Rahasya-manjari; 24, Sukhmanjari; 25, Rati-manjari; 26, Neh-manjari; 27, Ban-bihār; 28, Ras-bihār; 29, Rang-hulās; 30, Rang-bihār; 31, Rang-binod; 32, Anand-dasa; 33, Rahasya-latā; 34, Anand-latā; 35, Anurāg-latā; 36, Prem-latā; 37, Ras-anand; 38, Jugāl-dhyān; 39, Nirtya-bilās; 40, Dān-līla; 41, Mān-līla; 42, Braj-līla.

Other poems by different members of the same sect are the Sevak-bāni and the Ballabh-rasik ki bāni; the Guru-pratāp, by Dāmodar Dās; the Hari-nām-mahimā, by Dāmodar Swāmi; the Sri Rūp Lāl Jī ka ashtāka, by Hit Ballabh; and the Hari-nām-beli, the Sri Lāl Jī badhai and the Sri Lārili Jū ki badhai by Brindaban Dās.

2. *The Chhatthi Pālnā, or Assi Khambā, at Mahāban.*

The description of this building given in my Mathurā Memoir, Part I, page 149, is not very accurate. The pillars of the colonnade are mostly, if not all, anterior in date to Māhmūd of Ghaznī, and probably belonged to a temple, or it may be to several different temples of the Jaini faith, which he destroyed when he captured the fort in the year 1017. After they had been lying about for centuries, the Muhammadans in the reign of Aurangzib roughly put them together and set them up on the site of a modern Hindu temple that they had demolished. The building so constructed was used as a mosque till quite recent times, and its connection with Krishna, or his worship even, at any earlier period is entirely fictitious. That is to say, so far as concerns the actual fabric and the materials of which it is constructed: the site, as in so many other similar cases, has probably been associated with Hindu worship from very remote antiquity. In Sir John Strachey's time I obtained a grant of Rs. 1000 for the repair of the building, which had fallen into a very ruinous condition, and in digging the

foundations of the new screen-walls (the old walls had been simply set on the ground without any foundation at all) I came upon a number of remains of the true Hindu temple, dating apparently from about the year 1500 A. D. The Iconoclast would not use these sculptures in the construction of his mosque, since they had too recently formed part of an idolatrous shrine, but had them buried out of sight; while he had no scruple about utilizing the old Jaini pillars. Whatever I dug up, I either let into the wall or brought over to Mathurá for the local Museum, which in all probability will now never be instituted.

On a drum of one of the pillars is an inscription, which I read *Rám-dasa kas iknavi kam*, meaning, it would seem, 'Column No. 91, the gift of Rám Dás.' This is now upside down and from this fact as also from what has been said above, it may clearly be seen that my statement in the 'Memoir' that 'the pillars, as they now stand, occupy their original position' cannot be maintained. I still think, however, that in the main they represent the original design and that height was gained, from the first, by the simple expedient of placing one pillar on the top of another. For some of the inner columns are so carved, that they seem to be broken in two in the middle, though they are really each a single shaft.

3. *The Hindu sikhara ; its origin and development.*

If Mr. Fergusson had ever been able to visit Brindaban or to procure photographs of the temples there, it is possible that he would not have found the origin of the Hindu sikhara such an inscrutable mystery as he declares it to be. He conjectures that the external form may have been simply a constructural necessity resulting from the employment internally of a very tall pointed horizontal arch, like that of the Treasury at Mycenæ. But so far as my experience extends, no such arch was ever used in a Hindu temple. On the contrary the *cella*, over which the sikhara is built, is separated from the more public part of the building by a solid wall pierced only by a doorway small enough to be easily closed; while the chamber itself is of no great height and is covered in with a vaulted cieling, as to the shape of which nothing could be learnt from a view of the sikhara outside. And *vice versâ*. Thus at the great temple of Gobind Deva the central dome of the nave (or porch as Mr. Fergusson very inappropriately calls it) is perfect; but it is impossible to determine from thence with any certainty what would have been the outline and proportions of the tower that the architect proposed to raise over it. I have no question in my own mind that the origin of the sikhara is to be found in the Buddhist stúpa of which a representative example may be seen in Plate XIII sculptured at the back of a small pillar. Nor do I detect any violent break in the

development. The lower storey of the modern temple which, though most commonly square, is occasionally, as in the Madan Mohan example, an octagon and therefore a near approach to a circle, is represented by the masonry plinth of the relic-mound; the high curvilinear roof by the swelling contour of the earthen hill, and the pinnacle with its peculiar base by the Buddhist rails and umbrella on the top of a Dagoba. From the original stúpa to the temple of Parsvanáth at Khajuraho, of the 11th century, the towers of Madan Mohan and Jugal Kishor at Brindaban of the 16th, and the temple of Vishveshvar at Banáras the gradation seems to be easy and continuous.

A description of the two Brindaban temples is given in the Journal for 1872 (pages 318-320), but it is only now that I have been able to get photographs taken of them.

4. *The temple of Gobind Deva at Brindaban.*

Mr. Fergusson in his *Indian Architecture* speaks of this temple as "one of the most interesting and elegant in India, and the only one perhaps, from which a European architect might borrow a few hints." I should myself have thought that 'solemn' or 'imposing' was a more appropriate term than 'elegant' for so massive a building, and that the suggestions that might be derived from its study were 'many' rather than 'few'; but the criticism is at all events in intention a complimentary one. It is, however, unfortunate that the author of a book, which will long and deservedly be accepted as an authority, was not able to obtain more satisfactory information regarding so notable a *chef d'oeuvre*. The ground-plan that he supplies is extremely incorrect: for it gives in faint lines, as if destroyed, the choir, or *jag-mohan*, which happens to be in more perfect preservation than any other part of the fabric, and it entirely omits the two chapels that flank the *cella* on either side and are integral portions of the design. The *cella* itself is also omitted; though for this there was more excuse, since it was razed to the ground by Aurangzib and not a vestige of it now remains beyond the rough rubble wall of the choir, to which it had been attached. The three towers, over the two side chapels and the dome in the centre of the nave, were certainly never erected. Those over the choir and the sacrarium were both finished, and of the former I annex a plan. Its restoration was completed last month, (March 1877) with the exception of the finial and a few stages below it, which had entirely perished, and which Sir John Strachey on that account would not allow me to replace, on the general principle that in all such cases the new work must be more or less conjectural and therefore untrustworthy.

As in the later temple of Rádhá Ballabh (described in the first section

of this article) the triforium is a reproduction of Muhammadan design, while the work both above and below it is purely Hindu.* It should be noted however that the arches in the middle story are decorative only, not structural: the spandrels in the head might be—and, as a fact, for the most part had been—struck out, leaving only the lintel supported on the straight jambs, without any injury to the stability of the building.

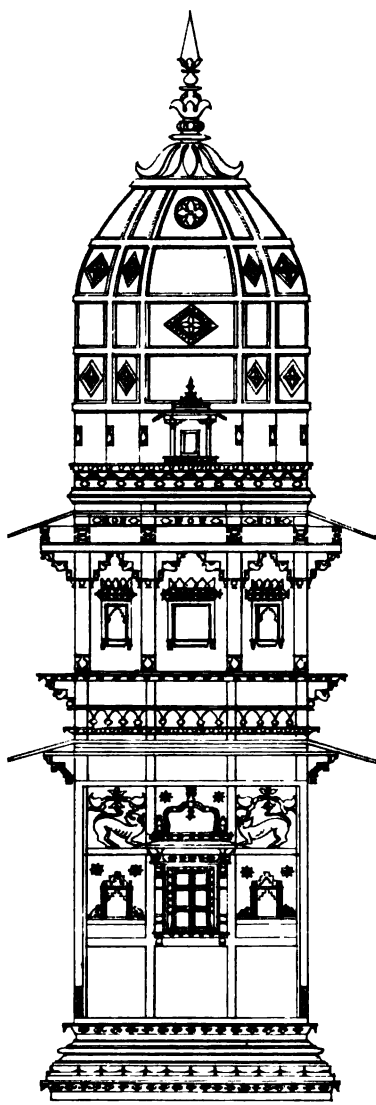
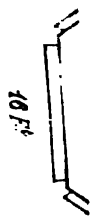
Its restoration was commenced in September 1873, and has been carried on under my supervision, without any professional assistance, up to the present time. The cost was estimated, in the D. P. W., at Rs. 1,32,387, but for the comparatively modest sum of Rs. 38,365 I have been able to accomplish almost all that was ever intended to be done. I had applied for a small supplementary grant of Rs. 3,642; but if it is sanctioned, there will be no one on the spot to see it expended.†

5. *The Sati Burj at Mathurá.*

This is a slender quadrangular tower of red sandstone which stands on the bank of the Jamuná, at the very heart of the modern city. It commemorates the Queen of Maharájá Bihár Mall of Jaypur, and was erected by her son, the Maharájá Bhagawán Dás, in the year 1570 A. D. The upper part, which had been destroyed long previously, was replaced about the beginning of the present century by an exceedingly ugly and incongruous plaster dome, which may help to preserve what remains of the original work, but quite destroys its architectural effect. The lower stories being also in a ruinous condition, I suggested to the reigning Maharájá that he should undertake its restoration as a family monument. It is not at all likely that the work will ever be set on foot; but the design that I had prepared for it may be deemed worthy of preservation. No small amount of time and thought was bestowed upon it, and I hope that architects will consider it both a pleasing object in itself and a probably faithful reproduction of the destroyed original.

* Thus eclecticism, which after all is only natural growth directed by local circumstances, has for centuries past been the predominant characteristic of Mathurá architecture. In most of the new works that I have taken in hand, and notably in the Catholic Church, which I had commenced and now have to leave unfinished, I have conformed to the *genius loci* and have shewn my recognition of its principles, not by a servile imitation of older examples, but rather by boldly modifying them in accordance with special requirements and so developing novel combinations.

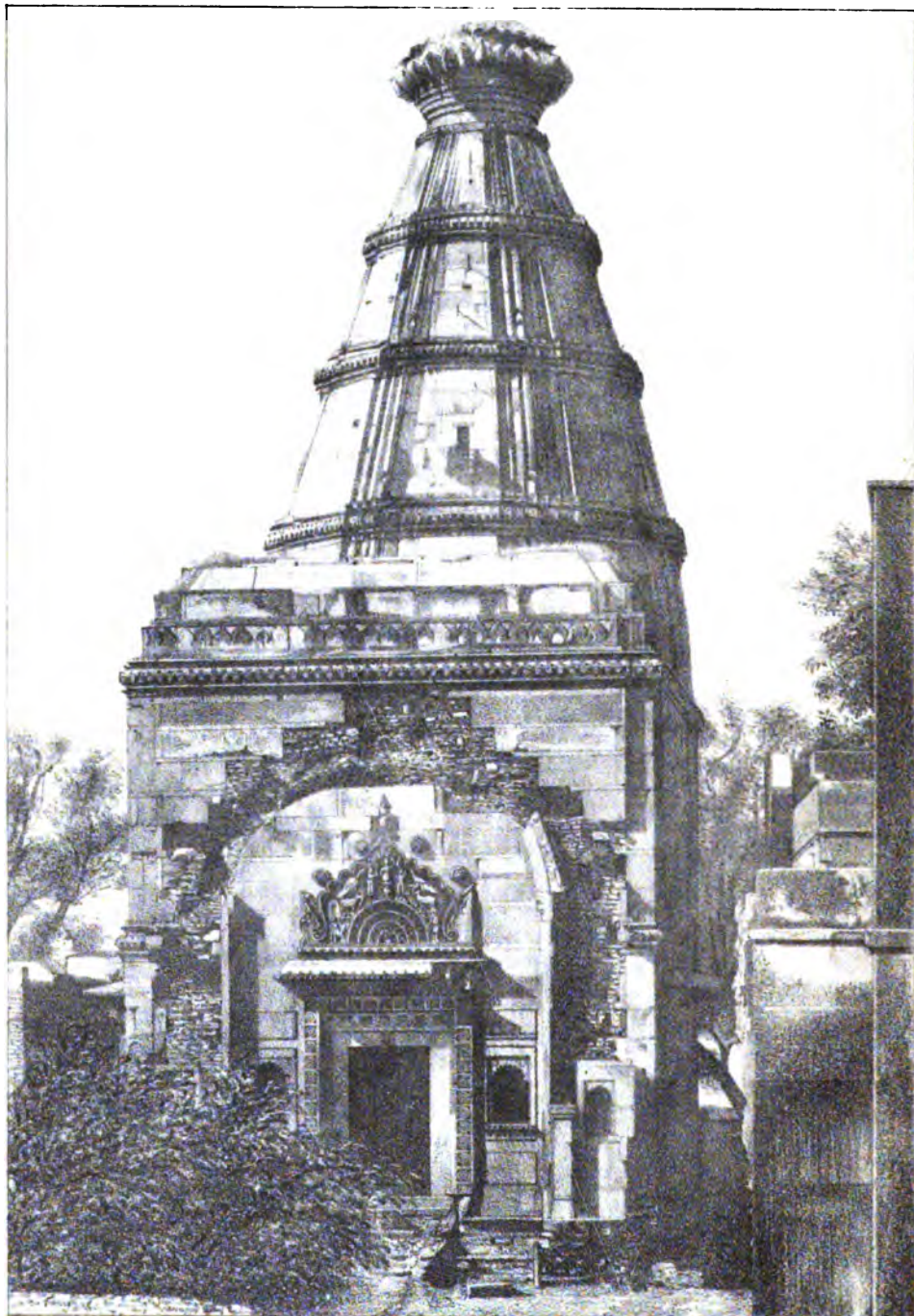
† The grant has been sanctioned and the work is being carried on, under the supervision of the Executive Engineer in the Archaeological Department, by the same local agency and the same body of stone-masons that I had collected and organized.



GROU AG-MOHAN,
RAD

RESTORED ELEVATION OF-
THE SATI BURJ, MATHURA.

W. D. D.



TEMPLE OF JUGAL KISHOR AT BRINDABAN

(From a Photograph.)

6. *Mediæval Hindu columns from Sahár.*

Sahár is a small town in the Chhátá Pargana, which was of some importance last century as the favourite residence of Thákur Badan Sinh, the father of Súraj Mall the founder of the present Bharatpur dynasty. A short time ago a dispute arose between the Muhammadans and the Hindus as to the possession of a site on which they wished to erect, the one party a mosque, the other a temple. The real fact, as afterwards more clearly appeared, was that the Hindus had originally a temple there, which the Muhamadans had thrown down and built a mosque over it. This too had fallen and the ground had for some years remained unoccupied. The case when brought into Court was decided in favour of the Hindus, who thereupon set to work and commenced the erection of a shrine to be dedicated to Rádhá Ballabh. In digging the foundations, they came upon the remains of the old temple, which I rescued and brought into Mathurá. They consist of 10 large pillars or pilasters in very good preservation and elegantly carved with foliage and arabesques and also a number of mutilated capitals, bases, &c., the whole series proving an interesting illustration of the mediæval Hindu style of architecture. Their value is increased by the fact that two of the shafts bear inscriptions, in which the date is clearly given as *sambat* 1128 (1072 A. D.). With the exception of the date, I have not succeeded in reading much else; but the accompanying photograph* of one of them is on a scale large enough to be legible. The style that I call 'the mediæval Hindu,' and of which these pillars afford a good late example, began about the year 400 A. D. and continued to flourish over the whole of Upper India for more than seven centuries. It is distinguished by the constant employment in the capital, or upper half column, of two decorative features, the one being a flower-vase with foliage over-hanging the corners and the other a grotesque mask. The physiognomy of the latter is generally of a very un-Indian type, and the more so the further we go back, as is well illustrated by Plate 13, a photograph that Sir John Strachey was kind enough to send me of a pillar in the underground temple in the Allahabad Fort. The *motif* is precisely the same as may be seen in many European cinque cento arabesques, where a scroll pattern is worked up at the ends, or in the centre, into the semblance of a human face. The fashion with us certainly arose out of the classic *renaissance*, and in India also may possibly have been suggested by the reminiscence of a Greek design. But it was more probably of spontaneous and independent origin; as also it was among our Gothic architects, in whose works a similar style of decoration is not altogether unknown. In

* The base, shown in this photograph, is more than a thousand years older and belongs to the Indo-Scythian period. It has been used simply as a socket in which to imbed the pillar and so raise the inscription above the ground.

the earlier examples, such as that at Allahabad, the face is very clearly marked; though even there the hair of the head and the moustaches are worked off into a scroll or leaf pattern. In later work, of which numerous specimens may be seen in the accompanying illustrations of different dates ranging between the two limits fixed by the Allahabad pillar at the beginning and the Sahár columns at the end, the eyes are made so protuberant, and the other features so distorted and confused by the more elaborate treatment of the foliage and the introduction of other accessories that the proportions of a human face are almost and in some cases are altogether destroyed. The tradition however exists to the present day; and a Mathurá stone-mason, if told to carve a grotesque for a corbel or string-course of any building, will at once draw a design, in which are reproduced all the peculiarities of the old models.

7. *Miscellaneous Antiquities, Mathurá Museum.*

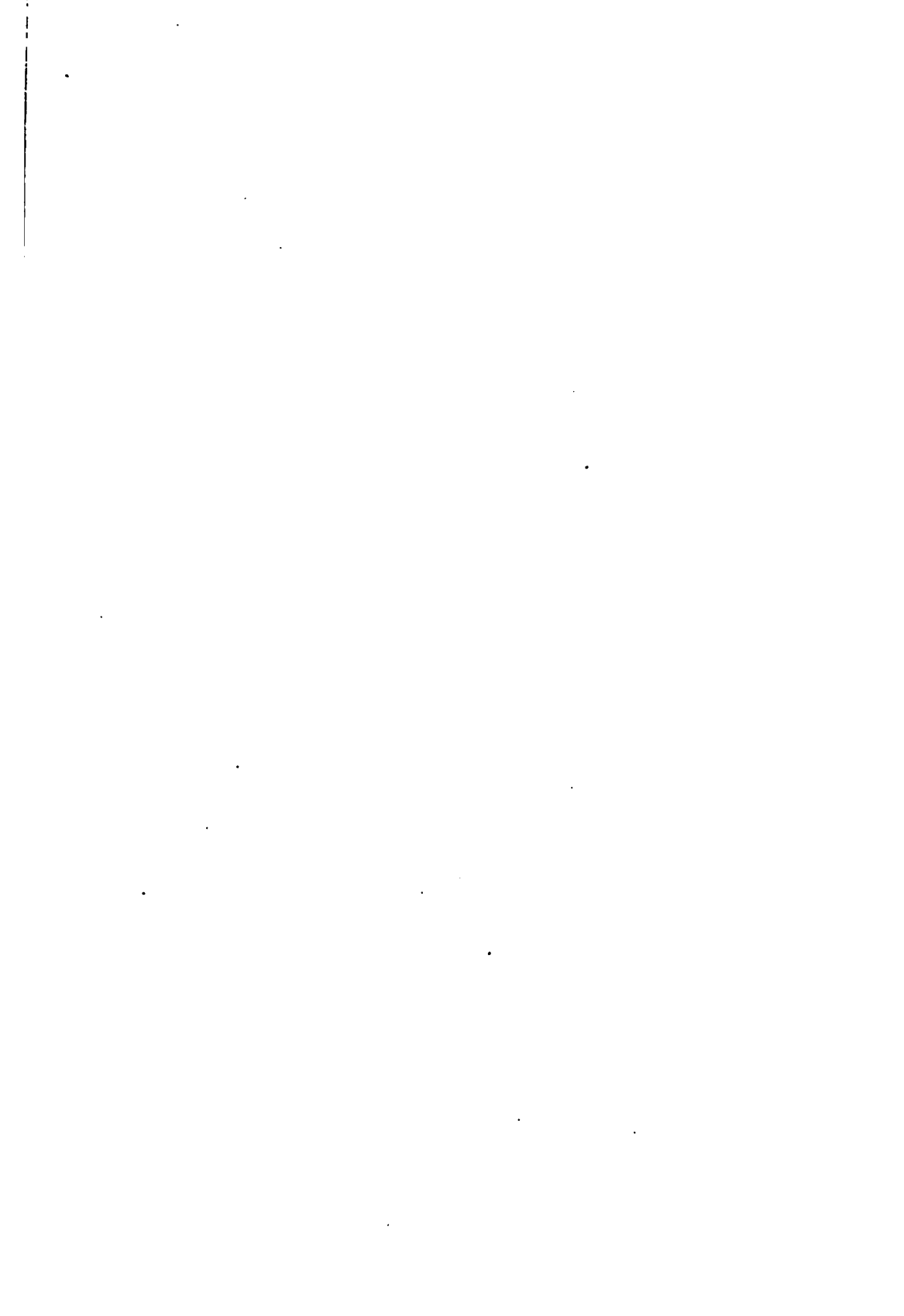
Plate No. 13 shews two Buddhist rails of early character. The one giving the representation of a *stúpa*, to which I have already referred, was brought from the *khera* of Jaysiñhpura, a village on the road between Mathurá and Brindaban. The other I dug out of one of the Chauwára mounds, where I found also a copper coin of Kanishka's reign. The columns with their bell-capitals surmounted by winged lions, and the miniature window-fronts or pediments, with which the architraves are decorated, illustrate the characteristic features of the architecture of the period. The upper group represents a sacred tree, enclosed in a railing, with two devotees worshipping it, the one having a wreath in his hand and the other a *chauri*. Below is an inscription in a single line ending with the word *dánam*, which records the name of the donor; but though most of the letters are clear, I cannot determine what the name is. The second group is probably a scene from one of the Játakas, to which the two birds will probably at some time give a clue.

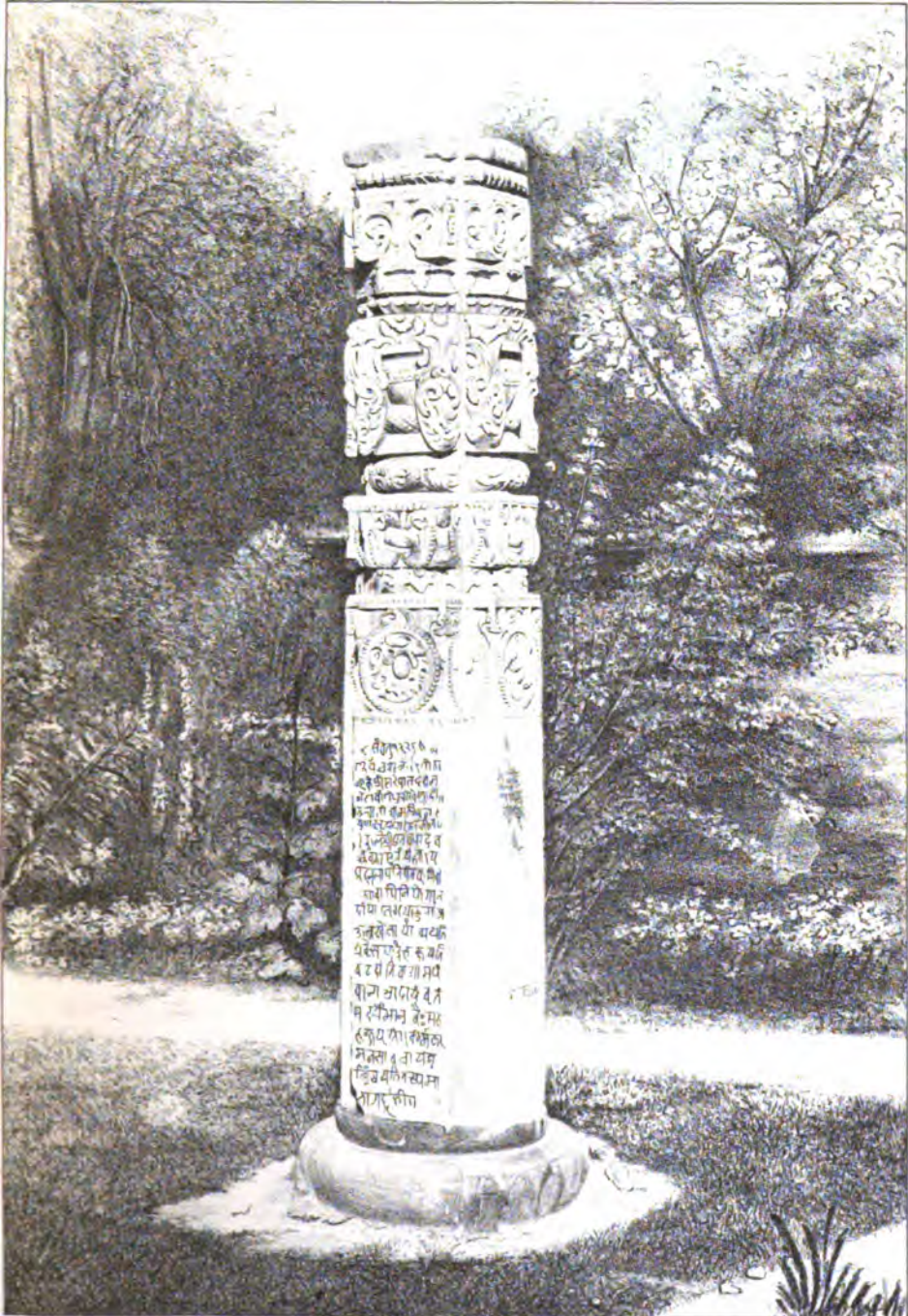
Plate No. 14 shews a Buddhist rail, also of the Indo-Scythian period, of unusually large dimensions, the height of the stone, though a piece of it has been broken off at the bottom, being still 6 ft. 4 in. It is sculptured with a female figure, almost nude but for her metal ornaments, who carries a wicker-work umbrella, the stick of which is so long that it rests upon the ground. In the compartment above is a very curious bas-relief representing two monkeys and a bird, seated on basket-work chairs, with a hideously mis-shapen dwarf standing on the ground between them and apparently shedding tears.

In Plate 15 the two Buddhist rails placed on either side of the lowest range of sculptures are the same of which a back view is given in Plate 13.



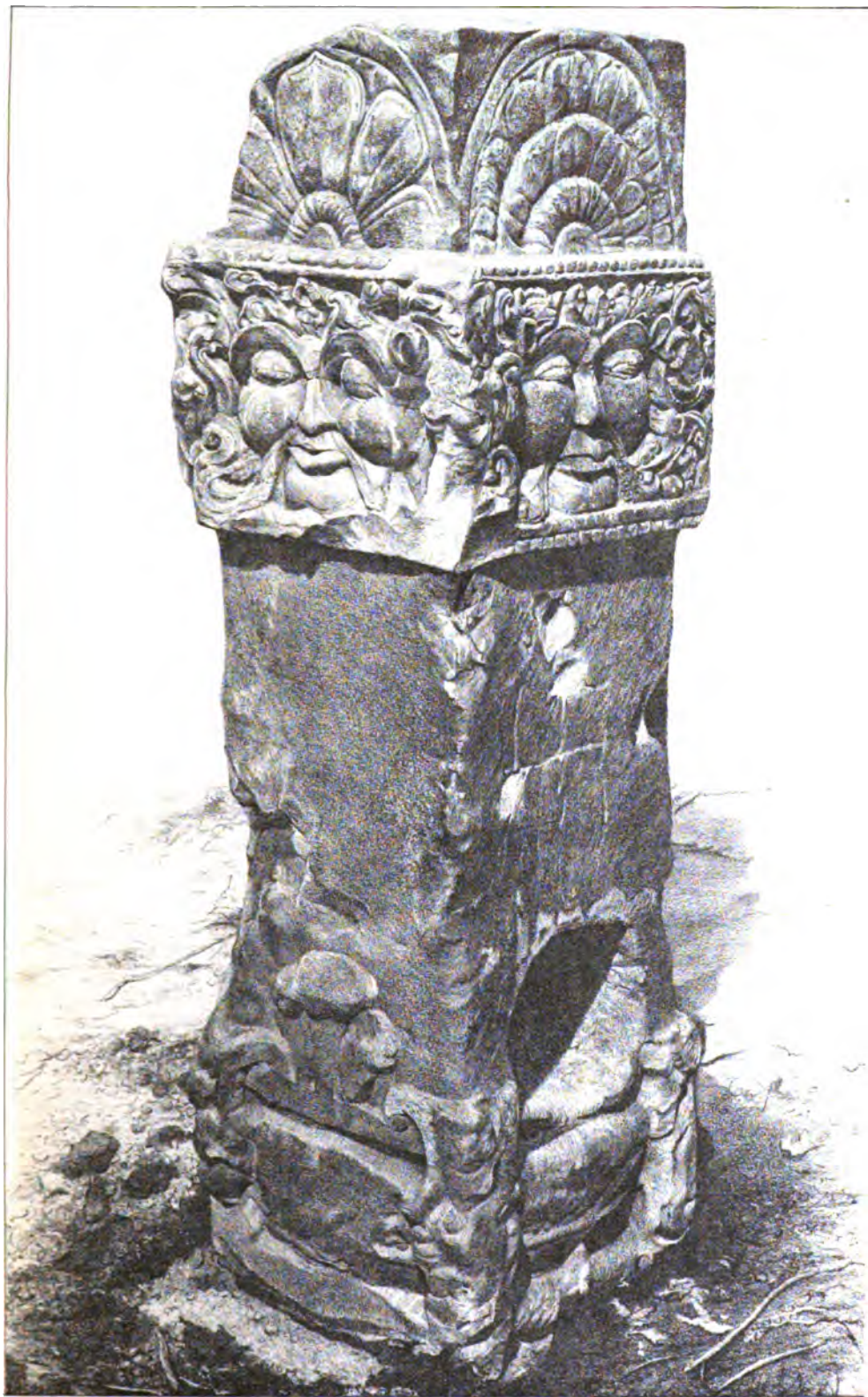
MEDIAVAL HINDU PILLARS, FROM SAHAR.
(From a Photograph.)





INSCRIBED PILLAR FROM SAMAT

(From a Photograph)



PILLAR WITH GROTESQUE MASK. FROM ALLAHABAD.

(From a Photograph.)

The draped Buddha, which I rescued from the bed of the Jamuná at Jaysiñhpura, is of early date and executed in a different style from most of those found in the neighbourhood. The arabesque pilaster next to it is a good specimen of the mediæval Hindu period. I found it in opening out the new paved way along the river bank in the city. The fragment of wall-decoration and the head are from the Kankáli tila, and the larger stone, covered with miniature temple façades of the same style as the caves at Karli and Ajanta, I brought from Mahában.

In the second tier (over an intermediate row of three Buddhist cross-bars) the small bas-relief, that occupies the place in the centre, is very curious. It represents a rustic wooden throne, with drapery thrown over it and a footstool set in front, and two attendants standing at the back, each with a *chauri* to keep off the flies. The object of veneration is a relic-casket, which is exposed upon the chair. Next to the pillar with the figure of Mayá Devi under the sál tree is a stone that I brought from Shergarh in the Chhátá Pargana, where I found it imbedded in one of the towers of a Fort built according to tradition by the Emperor Sher Sháh. It is the only example that I have seen in India of the use of the trefoiled circle as a decoration. It is the special characteristic of the architecture of Kashmír, a style which I am inclined to believe once spread much farther south, and was of purely Indian origin; while the later styles were modified more or less by Greek influences. The festoon is the same, as in the two flanking pillars (from the Kankáli tila) which I ascribe to about the year 400 A. D. the flower-vase being here used only, without the grotesque mask which was of somewhat later introduction. On the other side of the enthroned relic is what appears to be the spandril of a doorway with an outer border of grapes and vine leaves, and in the jamb the model of a triumphal pillar with bell-capital and winged lions and an elephant standing above the abacus. The upper portion of such a pillar with an inscription on the abacus, dated in the reign of Huvishka *sambat* 39, is also in the museum, and is figured by General Cunningham in volume III of his archaeological survey.

Of the two nude Jaina figures in the third tier, the one with the group of devotees below it, adoring the *chakra*, is of special interest on account of the inscription, which gives the date both in letters and figures as *sambat* 57. It would seem either that the century is omitted, or that some other era than that of Vikramáditya is intended: for the figure has rather a modern appearance, and the letters, which are very scratchy and ill-formed, are quite unlike the bold characters in the other inscriptions, when the king's name is given as well as the date and which are therefore known to be of the Indo-Scythian period.

In the upper tier, the female figure with a child in its lap (from the Manoharpur quarter of the city) is of exceptional character and uncertain date. The square box, with a seated Buddha fully draped, on each of the four sides, is shewn by the flanking columns to be of great antiquity. I brought it from the Mahávidya tila, which is unquestionably one of the oldest religious sites in Mathurá and probably has many relics of the past buried under the modern temple. The architrave, with defaced figure sculpture at either end, I found in the progress of the repairs of the Chhatthi Pálná at Mahában, being part of the Hindu temple there which was destroyed by Aurangzib. It is a good example of a simple but very effective style of decoration.

8. *The Festival of the Holi, as kept in Braj.*

In 1877 the Festival of the Holi fell unusually early in the year, while the weather was still cool enough to allow of a mid-day ride without serious inconvenience. I took advantage of the opportunity thus afforded me and made the round of the principal villages in the Chhátá and Kosi Parganas where the rejoicings of the Phúl Dol, for so these Hindu Saturnalia are popularly termed, are celebrated with any peculiar local observances, visiting each place on its special fête-day and jotting down what I saw in my note-book. Several of the usages are, I believe, entirely unknown beyond the limits of Braj, even to the people of the country, and—so far as I could ascertain by enquiries—they had never before been witnessed by any European. The following extracts from my diary may therefore be thought worthy of preservation.

Feb. 22nd, Barsána, the Rangila Holi.—In the middle of the town is a small open square, about which are grouped the stately mansions and temples built by the great families who resided here during the first half of the 18th century. I find a seat in the balcony over the gateway of the house still occupied by the impoverished descendants of the famous Katára, Rúp Rám, the founder of Barsána's short-lived magnificence, from which I have a full view of the humours of the crowd below. The cheeriness of the holiday-makers as they throng the narrow winding streets on their way to and from the central square, where they break up into groups of bright and ever varying combinations of colour; with the buffooneries of the village clowns and the grotesque dances of the lusty swains, who with castanets in hand, caricature in their movements the conventional graces of the Indian ballet-girl,

Crispum sub crotalo docta movere latus,

all make up a sufficiently amusing spectacle; but these are only interludes and accessories to the great event of the day. This is a sham fight between



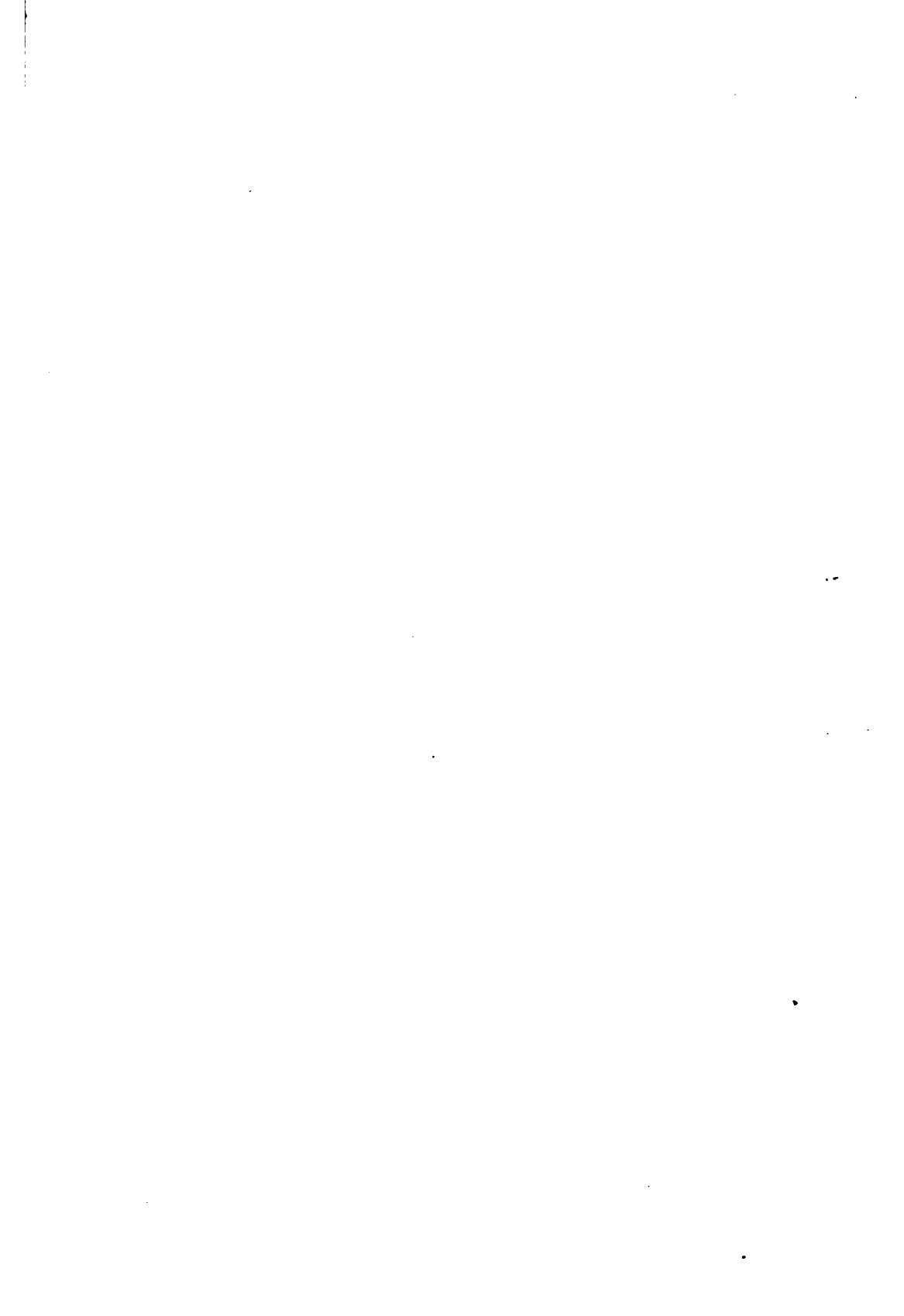
BUDDHIST RAILS, MATHURA.

(From a Photograph.)



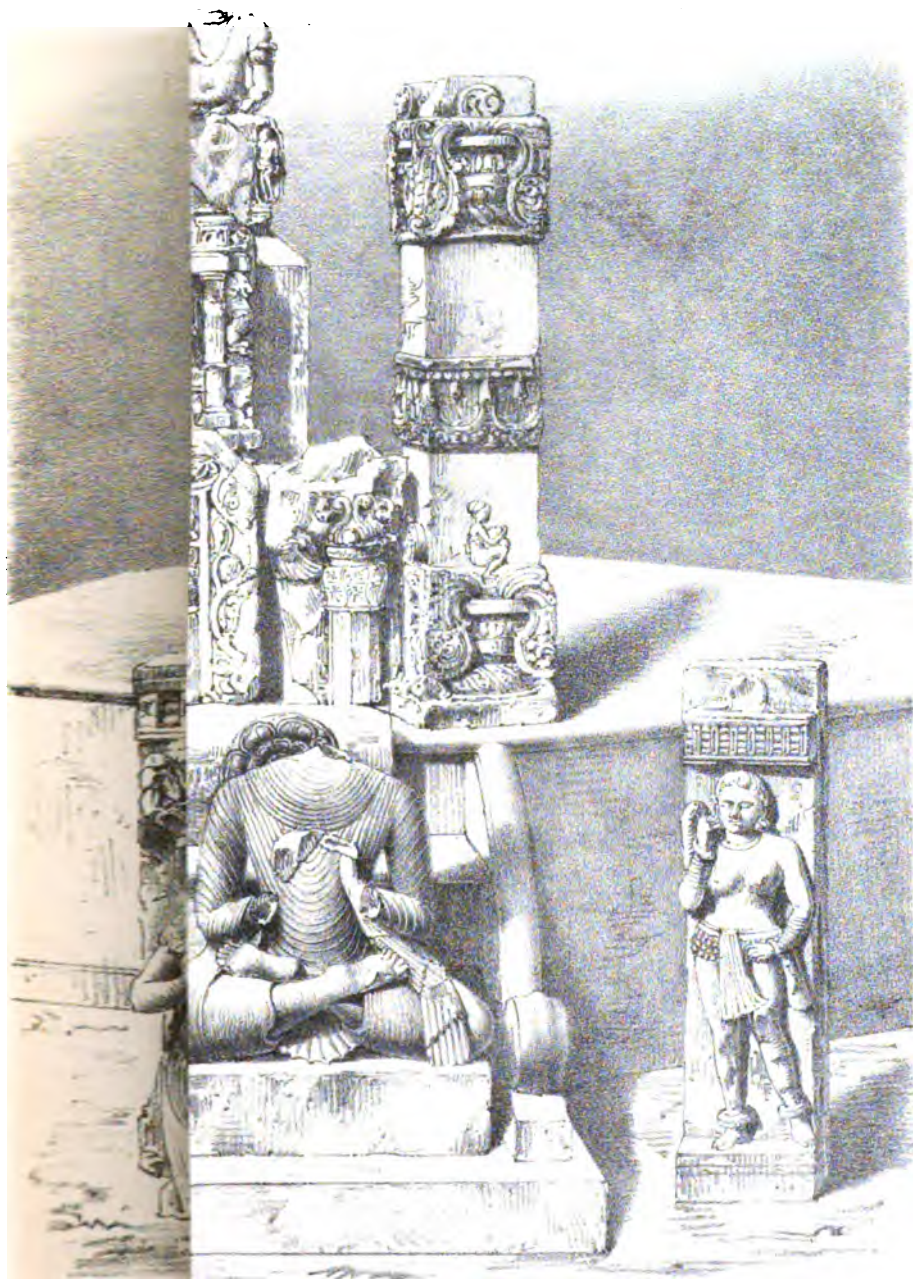
PARVATI - GAI FROM THE CHAITESVAR TILA, MATHURA

FROM A PHOTOGRAPH





THE GUPTA PALA FROM THE CHANDRAVATI PILA, MATHURA
FROM A PHOTOGRAPH



S. Sedgfield, Ltd.

the men from the neighbouring village of Nand-gánw and the Barsána ladies, the wives of the Gosáins of the temple of Lárli Ji, which stands high on the crest of the rock that overlooks the arena. The women have their mantles drawn down over their faces and are armed with long heavy bambus, with which they deal their opponents many shrewd blows on the head and shoulders. The latter defend themselves as best they can with round leather shields and stags' horns. As they dodge in and out amongst the crowd and now and again have their flight cut off and are driven back upon the band of excited viragoes, many laughable incidents occur. Not unfrequently blood is drawn, but an accident of the kind is regarded rather as an omen of good fortune, and has never been known to give rise to any ill-feeling. Whenever the fury of their female assailants appears to be subsiding, it is again excited by the men shouting at them snatches of the following ribald rhymes. They are not worth translation, since they consist of nothing but the repetition of the abusive word *sálá*, applied to every person and thing in Barsána. That town being the reputed home of Rádhá, the bride, its people are styled her brothers; while the Nand-gánw men account themselves the brothers of Krishna the bridegroom.

श्रीभांडवधार्ई बरसानेकी ।

सब सारे बरसानेबारे रावलबारे सारे ।
 जगन्नाथके नाती सारे वे बरसानेबारे ॥
 खवानियाँ चौर कटारे सारे जे बरसानेबारे ।
 डोंम ठड़ेरे सबही सारे चौर पत्तराबारे ॥
 बाग बगीचा सबही सारे सारे सींचनबारे ।
 बिरकत चौर गुदरिया सारे खंबे सुतनाबारे ॥
 वावाजी भानों खरिसारे प्रेम सरोवरबारे ।
 खाट खटोखा सबही सारे चौका चूल्हे सारे ॥
 अहलायत महलायत सारे सारे खंभतिहारे ।
 अगवारे पिछवारे सारे गैल गिरारे सारे ॥

Feb. 23rd, Nand-gánw.—Another sham fight as on the preceding day, only with the characters reversed; the women on this occasion being the

wives of the Gosáins of the Nand-gánw temple, and their antagonists the men of Barsána. The combatants are drawn up more in battle-array, instead of skirmishing by twos and threes, and rally round a small yellow pennon that is carried in their midst; but the show is less picturesque in its accessories, being held on a very dusty spot outside the town, and was more of a phallic orgie.

Feb. 27th, the Holi. Phálen.—Here is a sacred pond called Pahlád-kund, and the fact of its having preserved its original name gives a clue, as in so many parallel cases, to the older form of the name now borne by the village. The local pandits would derive the word *Phálen* from the verb *phárna*, “to tear in pieces,” with a reference to the fate of Pahlád’s impious father, Hiranya-Kasipu: but such a formation would be contrary both to rule and to experience, and the word is beyond a doubt a corruption of Pahláda-gráma. Thus: 1st, the *r* in the compounds *pr* and *gr* is elided by Vararuchi’s sūtra, *Sarvatra lava-rám*, III, 3, as in *kos* for *kros*; 2ndly, the *d* in *láda* is elided by Vararuchi II, 2, as in *pau* for *pada*; 3rdly, the initial *g* of *gáma* is elided by a further application of the last quoted rule; 4thly, the *m* in *gám* becomes *v*, these two letters being ordinarily interchangeable, thus *dhimar* = *dhivar*; *Bhamáni Bhaváni*; *gauna* = *gamana*; and 5thly, a nasal is inserted, which can always be done at pleasure. The result is Pahlau-aunw, from which to Phálan or Phálen is a transition so easy as to be almost a phonetic necessity.

Arriving at the village about an hour before sunset I found a crowd of some 5000 people closely packed in the narrow space on the margin of the pond and swarming over the tops of the houses and the branches of all the trees in the neighbourhood. A large bonfire had been stacked half-way between the pond and a little shrine dedicated to Pahlád, inside which the Khara-pat, or Pánda, who was to take the chief part in the performance of the day, was sitting telling his beads. At 6 P. M. the pile was lit and being composed of the most inflammable materials at once burst into such a tremendous blaze that I felt myself scorching, though the little hillock where I was seated was a good many yards away. However, the lads of the village kept on running close round it, jumping and dancing and brandishing their *lathis*, while the Pánda went down and dipped in the pond and then, with his dripping *pagri* and *dhuti* on, ran back and made a feint of passing through the fire. In reality he only jumped over the outermost vergo of the smouldering ashes and then dashed into his cell again, much to the dissatisfaction of the spectators, who say that the former incumbent used to do it much more thoroughly. If on the next recurrence of the festival, the Pánda shews himself equally timid, the village proprietors threaten to eject him, as an impostor, from the land which he holds rent-free simply on the score of his being fire-proof.

Feb. 28th, Kosi.—After sitting a little while at a *nach* of the ordinary character given by one of the principal traders in the town, I went on to see the *chaupáis*, or more special Holi performances, got up by the different bodies of Ját zamindárs, each in their own quarter of the town. The dancers, exclusively men and boys, are all members of the proprietary clan and are all dressed alike in a very high-waisted full-skirted white robe, reaching to the ankles, called a *jhagá*, with a red *pagri*, in which is set at the back of the head a long tinsel plume, *Kalangi*, to represent the peacock feathers with which Krishna was wont to adorn himself as he rambled through the woods. The women stand at one end of the court-yard with their mantle drawn over their faces and holding long *láphis* with which at a later period of the proceedings they join in the Holi sports. Opposite them are the bands-men with drums, cymbals and timbrels and at their back other men with sticks and green twigs which they brandish about over their heads. The space in the middle is circled by torch-bearers and kept clear for the dancers, who are generally 6 in number, only one pair dancing at a time. Each performer, in the dress as above described, has a knife or dagger in his right hand and its scabbard in his left. At first darting forward they make a feint of thrusting at the women or other spectators and then pointing the knife to their own breast they whirl round and round, generally backwards, the pace growing faster and more furious and the clash of the band louder and louder till at last they sink down, with their flowing robe spread out all round them, in a sort of curtsy, and retire into the back ground to be succeeded by another pair of performers. After a pair of men comes a pair of boys, and so on alternately with very little variation in the action. Between the dances a verse or two of a song is sung, and at the end comes the *Holi khelna*. This is a very monotonous performance. The women stand in a line, their faces veiled, and each with a *láphi* ornamented with bands of metal and gaudy pendants, like the Bacchantes of old with the thyrsus, and an equal number of men oppose them at a few yards' interval. The latter advance slowly with a defiant air and continue shouting snatches of scurrilous song till they are close upon the women, who then thrust out their *láphis* and without uttering a word follow them as they turn their back and retreat to their original standing-place. Arrived there they let the women form again in line as they were at first and then again advance upon them, precisely as before, and so it goes on till their repertory of songs is exhausted or they have no voice left to sing them. To complete my description I here give some specimens of these *sákhis* or verses, and have added notes to all the words that seemed likely to require explanation. They are too coarse and at the same time too stupid to make it desirable for me to translate them.

होली खेलनेके समयकी साखी ।

कान्हा धरे रे मुकट खेले होरी ।

एक ओर खेले कुंवर कन्हैया एक ओर राधा गोरी ॥१॥

इन गलियन काम कहा तेरो ।

इन गलियन मेरो खालू* फाखो में तो फाखंगी यार झगा† तेरो ॥२॥

खिसली तोहि देख अटाते ।

तु जु कहेहो तोहि अध्वर‡ लूंगो अब मेरी टूटी है बांह बराॴते ॥३॥

कब निकसेगो सूक्र॥ चले चालौ॥ ।

गोरीने डोला सजवायो रसियाने सिकल कसो भालो ॥४॥

होरी** मत करे मान राख देंउगी ।

रंग महल मेरो पलंग बिछयो है झां तेरो जामा†† डाट लेंउगी ॥ ५ ॥

संग सोयवेकी सोस‡‡ कही होती ।

माटी खोदन गई खदानेॴॴ झां मेरी बांह गही होती ॥ ६ ॥

गजर ठेरारे॥॥ गजर ठेरा ऊंचे चोड़े॥॥ पे चार ।

गजर ठेराय ऊंचे चोड़ेको॥॥ एक सुख देख्यो गाल अधर ले जाय ॥७॥

मोह धोय आई गाल*** कटाइवे कू ॥८॥

* *Syálu*, a woman's *dopatta*.

† *Jhagá*, a man's dress.

‡ *Adhbar*, in the middle.

§ *Bará*, an ornament worn by women on the elbow.

॥ *Suk*, the planet Venus, which is regarded as auspicious.

¶ *Chdian*, the same as the more common *gauna*.

** *Jori*, for *zori*, *zabrdasti*.

†† *Jom*, lust, passion.

‡‡ *Dyaus*, the day-time.

§§ *Khadána*, a clay pit.

॥ *Therá*, fix, for *thahra*.

¶¶ *Chonda*, the knot of hair at the top of a woman's head.

*** *Gál katána*, to have the cheek kissed.

खाज मिटे तेरी ॥ ८ ॥

साथिन तेरो गोना कहिये ।

गोनेमेंका फूल बटे हैं आँख मीच सहजिये ॥ १० ॥

मगन बोलीरे चार मगन बोली बनमें पायो चार मगन बोली ।

बड़ेसे भोगरा*में पटक पकारी नारे†की झटका खोली ॥ ११ ॥

March 1st, Kosi.—Spend an hour or two in the afternoon as a spectator of the Holi sports at the Gomati-Kund. Each of the 6 Ját villages of the Denda Pál§ has two or more *chaupáis*, which come up one after the other in a long procession, stopping at short intervals on the way to dance in the manner above described, but several at a time instead of in single pairs. One of the performers executed a *pas de seul* mounted on a *daf*, or large timbrel, which was supported on the shoulders of four other men of his troupe. Bands of Mummies (or *swáags*) were also to be seen, one set attired as Muhammadan fakirs; another (*gháyalon ká swág*) as wounded warriors, painted with streaks, as it were of blood, and with sword-blades and daggers so bound on to their neck and arms and other parts of the body that they seemed to be transfixed by them. Some long iron rods were actually thrust through their protruded tongue and their cheeks, and in this ghastly guise and with drawn swords in their hands, with which they kept on dealing and parrying blows, the pair of combatants perambulated the crowd.

March 2nd.—At 2 P. M. ride over to Bathen for the Holanga mela, and find a place reserved for me on a raised terrace at the junction of four streets in the centre of the village. Every avenue was closely packed with the densest throng, and the house-tops seemed like gardens of flowers with the bright dresses of the women. Most of them were Játs by caste and wore their distinctive costume, a petticoat of coarse country stuff worked by their own hands with figures of birds, beasts and men of most grotesque design, and a mantle thickly sewn all over with discs of talc, which flash like mirrors in the sun and quite dazzle the sight. The performers in the *chaupái* could scarcely force their way through the crowd much less dance, but the noise of the band that followed close at their heels made up for all shortcomings. There was a great deal of singing, of a very vociferous and

* *Bhaungara*, a thicket.

† *Nára*, a twisted string, *izar-band*.

‡ *Jhatak*, a knot.

§ Any subdivision of a Ját clan is called a *Pál*, and the town of Kosi is the centre of one such subdivision, which is known as the Denda Pál.

probably also a very licentious character ; but my ears were not offended, for in the general din it was impossible to distinguish a single word. Handfuls of red powder (*abír*) mixed with tiny particles of glistening talc were thrown about, up to the balconies above and down on the heads of the people below, and seen through this atmosphere of coloured cloud, the frantic gestures of the throng, their white clothes and faces all stained with red and yellow patches, and the great timbrels with bunches of peacocks' feathers, artificial flowers and tinsel stars stuck in their rim, borne above the players' heads, and now and again tossed up high in the air, combined to form a curious and picturesque spectacle. After the music came a *posse* of rustics each bearing a rough jagged branch of the prickly acacia, stript of its leaves, and in their centre one man with a small yellow pennon on a long staff, yellow being the colour appropriate to the Spring season and the god of Love. The whole party slowly made its way through the village to an open plain outside, where the crowd assembled cannot have numbered less than 15,000. Here a circular arena was cleared and about a hundred of the Bathen Játñis were drawn up in a line, each with a long bambu in her hands, and confronting them an equal number of the bow-men who are all from the neighbouring village of Jau. A sham fight ensued, the women trying to beat down the thorny bushes and force their way to the flag. A man or two got a cut in the face, but the most perfect good humour prevailed, except when an outsider from some other village attempted to join in the play ; he was at once hustled out with kicks and blows that meant mischief. The women were backed up by their own husbands, who stood behind and encouraged them by word, but did not move a hand to strike. When it was all over, many of the spectators ran into the arena, and rolled over and over in the dust, or streaked themselves with it on the forehead, taking it as the dust hallowed by the feet of Krishna and the Gopís.

The forenoon had been devoted to the recitation of Hindi poems appropriate to the occasion. I was not on the spot in time enough to hear any of this, but with some difficulty I obtained for a few days the loan of the volume that was used, and have copied from it three short pieces. The actual MS. is of no greater antiquity than 1776 A. D., the colophon at the end, in the curious mixture of Sanskrit and Hindi affected by village pandits, standing thus :

Sambat 1852 Bhadrapad sudi 2 dwitiya, rabibar, likhitam idam pustakam, Sri Gopál Dás Charan-Pahári*-madhye parhan árti Sri Seva Dás Baṛi Bathain vási :

* Charan-Pahári is the name of a small detached rock, of the same character as the Bharatpur range, that crops up above the ground in the village of Little Bathen.

but probably many successive copies have been made since the original was thumbed to pieces. The first stanzas which are rather prettily worded, are, or at least profess to be, the composition of the famous blind poet Súr Dás.

॥ पद ॥

तेरी गति जानी न परै कहुणामै हो ।
 आगम अगम अगाधि अगोचर कैदबुधिविधिसचरै ॥
 अति प्रचंड वल पौरिषता मै केहरि भूष मरै ।
 अनाआस विन उद्दिम कियै अजगर पेट परै ॥
 कवडक चन डूवत पानीमै कवडक सिला तिरै ।
 वागरमै सागर करिडारै चडदिस नीर भरै ॥
 रीते भरै भरे फिरि डारै मैहरि करै तौ फेरि भरै ।
 पाहन वीच कमल परगासै जलमै अगिन जरै ॥
 राजा रंक रंकतै राजा लै सिरकच धरै ।
 छर पतित तिरिजाय छिनकमै जौ प्रभु नैक डरै ॥

Translation.

“Thy ways are past knowing, full of compassion, Supreme Intelligence, unapproachable, unfathomable, beyond the cognizance of the senses, moving in fashion mysterious.

“A lion, most mighty in strength and courage, dies of hunger ; a snake fills his belly without labour and without exertion.

“Now a straw sinks in the water, now a stone floats : he plants an ocean in the desert, a flood fills it all round.

“The empty is filled, the full is upset, by his grace it is filled again ; the lotus blossoms from the rock and fire burns in the water.

“A king becomes a beggar and again a beggar a king, with umbrella over his head ; even the guiltiest (says Súr Dás) in an instant is saved, if the Lord helps him the least.”

The second piece, in a somewhat similar strain, is by Dámodar Dás.

॥ पद ॥

अरे मन भजिलै नंदलला ।
 यह बांननमै रक्षौ किन कोज पकरत नाहि पला ॥
 वेद पुरान संमृत यौ भाषौ थाते नाहि भला ।
 दिनदिन बढ़त प्रताप चौगुनौ जैसे चंद्रकला ॥
 काकौ धन काकौ यहसंपति काको सुतअवला ।
 दामोदर कहु थिर न रहैगो जगमै चलीचला ॥

Translation.

“Come, my soul, adore Nand-lala (*i. e.* Krishna) whether living in the house or in the woods (*i. e.* whether a man of the world or a hermit) there is no other help to lay hold of.

“The Veda, the Purānas and the Law declare that nothing is better than this; every day honour increases four-fold, like the moon in its degrees.

“Who has wealth? who has house and fortune? who has son and wife? says Dāmodar, nought will remain secure in the world, it is gone in a moment.”

The third piece, an encomium of the blooming Spring, is too simple to require any translation.

राग वसंत ॥

नवल वसंत नवल छंदावन नवले फूलेफूल ।
 नवले कान्ह नवल सब गोपी निरत एकैदूल ॥
 नवले साष जवादि कुमकुमा नवले वसन अमूल ।
 नवले छीटवनीकेसरिकी मेहत मनमथसूल ॥
 नवल गुलाल उड़ै रंगवूका नवल पवनके झूल ।
 नवलहीं वाजे वाजे श्रीभट कालिंदीकै कूल ॥

The only divinities who are now popularly commemorated at the Holi Festival are Rādhā, Krishna and Balarāma; but its connection with them can only be of modern date. The institution of the Ban-jātra and the

Rás-lílá and all the local legends that they involve is traceable to one of the Brindaban Gosáins at the beginning of the 17th century A. D., viz. Náráyan Bhatt, a disciple of Krishan Dás, Brahmáchári, whom Sanátan, the leader of the Bengali Vaishnavas in Upper India, appointed the first Pujári of his temple of Madan Mohan. The fact, though studiously ignored by the Hindus of Mathurá, is distinctly stated in the Bhakt-málá, the work which they admit to be of paramount authority on such matters. But the scenes that I have described carry back the mind of the European spectator to a far earlier period and are clearly relics, perhaps the most unchanged that exist in any part of the world, of the primitive worship of the powers of nature on the return of Spring. Such were the old English merry-makings on May Day, and still more closely parallel the Phallic orgies of Imperial Rome as described by Juvenal. When I was listening to the din of the village band at Bathan, it appeared to be the very scene depicted in the lines—

Plangebant aliæ proceris tympana palmis,
Aut tereti tenuis tinnitus ære ciebant,
Multis raucisonos efflabant cornua bombos,
Barbaraque horribili stridebat tibia cantu.

Or again in the words of Catullus :

Leve tympanum remugit, cava cymbala recrepant,
Ubi sacra sancta acutis ululatibus agitant,
Quatiuntque terga tauri teneris cava digitis.

While the actors in the *chaupái*, with dagger in hand, recalled the pictures of the Corybantes or Phrygian priests of Cybele, the very persons to whom the poet refers. In Greece the Indian Holi found its equivalent in the Dionysia, when the phallus, the symbol of the fertility of nature, was borne in procession, as it now is here, and when it was thought a disgrace to remain sober. In like manner the Gosáins and other actors in the Indian show are quite as much inspired in their frenzied action by their copious preliminary libations as by the excitement of the scene and the barbarous music of the drums, cymbals and timbrels that accompany them.

Mathurá, April 6th, 1877.

POSTSCRIPT.

1. *Recent Archæological Discoveries.*

Since my transfer from the district, the mound adjoining the Magistrate's Court-house, which has often been explored before with valuable results, has been completely levelled as a Famine relief work. A large number of miscellaneous sculptures have been discovered, of which I have received no definite description. But the more prominent object is a life-size statue of Buddha, which is said to be very finely executed and also in

excellent preservation, though unfortunately it has been broken into two pieces by a fracture just above the ankles. On the base is an inscription in Pali characters, of which a transcript has been sent me by a clever native draughtsman. I decypher it as follows:—

“Deyadharmāyam Sākya-bhikshu Yasa-dittasya. Yad atra punyam, tad bhavatu mātā-pitroh sukhā *rya páddhya yatam* cha sarvva-satv-ánuttara-jnána-váptaye.”

I have probably misread some of the letters printed in italics, for as they stand they yield no sense. (*Vide Pl. XIX.*) The remainder I translate as follows:

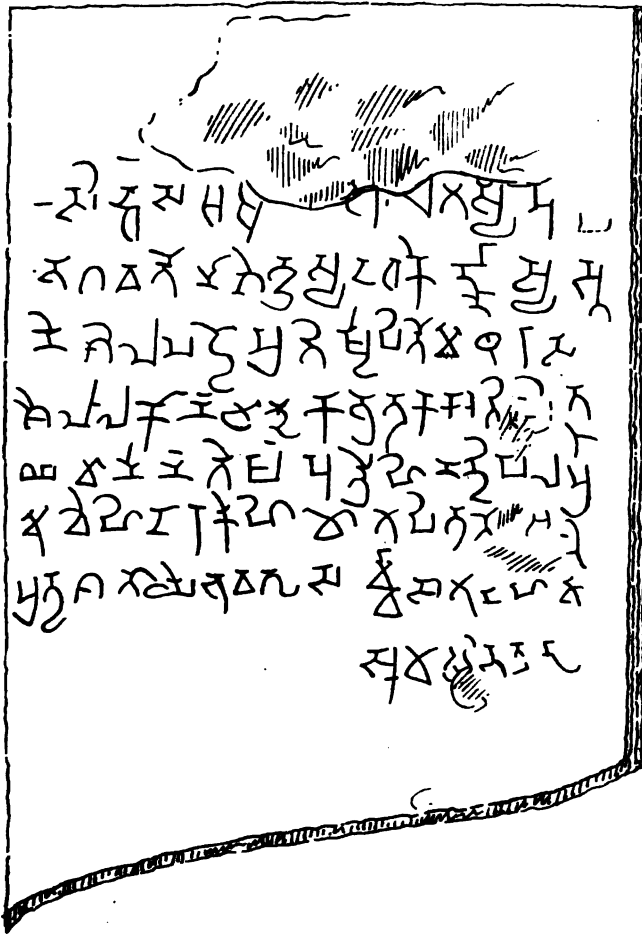
“This is the votive offering of the Buddhist monk Yasa-ditta. If there is any merit in it, may it work for the good of his father and mother and for the propagation of perfect knowledge throughout the world.”

In Sanskrit the primary meaning of *deya-dharma* is the duty of giving; but in Páli it ordinarily stands for ‘the gift’ itself. The literal signification of the monk’s name Yasa-ditta is ‘Resplendent with glory’; *ditta* being the Páli, Prákrit, or Hindi form of the Sanskrit *dípta*, by a rule of Vararuchi’s, under which the example given is *sutta* (the modern *sotá*) for *supta*. *Vápti*, ‘the propagation’ is from the root *vap*, to sow; from which also comes the Hindi word *báp*, ‘a father,’ like the Latin *sator*, from *sero*.

A second inscription of some length commences with the words *Mahá-rájasya Devaputrasya Huvishhkasya Samvatsare 51 Hemanta masa 1 div.....* but I have not been able to read further, as the only transcript that I have received is a very imperfect one. A great number of fragmentary sculptures of different kinds have also, as I understand, been discovered, and some of them have been photographed for General Cunningham, who spent several days at Mathurá for the purpose of examining them. His account will doubtless appear in some future volume of his Archæological Survey.

Since Gen. Cunningham’s visit a third inscribed slab has been found. A transcript has been made and sent me and a facsimile of it is herewith given. I have not yet succeeded in decyphering it. It begins with the word *siddham*; then apparently followed the date, but unfortunately there is here a flaw in the stone. After the flaw is the word *etasya*.* The second line begins with the word *Bhagavat*. In the third line is the name *Ma-*

* The word following *etasya* begins with the letters *pu* the remainder being defaced, and was probably *purvaye*. This phrase *etasya purvaye* is of frequent occurrence in these inscriptions and is translated by Gen. Cunningham ‘on this very date’. I do not think it can bear such a meaning. It might be literally rendered ‘after this’; but it is really an expletive, like the Hindi *age*, or occasionally the Sanskrit *tad-ananta-rām*, with which an Indian letter generally begins—after the stereotyped complimentary exordium—and which in the absence of full stops and capital letters serves to indicate a transition to a new subject.



INSCRIBED SLAB,

Found at Mathura in 1878.

[illegible]

Zincographed at the Surveyor General's Office Calcutta.

PALI INSCRIPTION.

Found at Mathura.

thurá; at the end of the sixth line *mátapitroh*; in the middle of the seventh line *bhavatu sarva*.

2. *The Rádhá-sudhá-nidhi.*

The delay which has occurred in publishing these notes, enables me now to add a translation of the text of the Sanskrit poem of Hari Vans. It has been written at a considerable disadvantage, since here in Bulandshahr I am unable to consult the commentaries which I had borrowed at Mathurá. Even in this district there is, I find, at least one temple of the sect, at the town of Shikárpur.

Translation.

1. Hail to the home of Vrisha-bhánu's daughter, by whom once and again even Madhu-Súdan—whose ways are scarce intelligible to the greatest sages—was made happy, as she playfully raised the border of her robe and fanned him with its delicious breeze.

2. Hail to the majesty of Vrisha-bhánu's daughter, the holy dust of whose lotus feet, beyond the conception of Brahma, Siva and the other gods, is altogether supernaturally glorious, and whose glance moistened with compassion is like a shower of the refined essence of all good things.

3. I call to mind the dust of the feet of Rádhiká, a powder of infinite virtue, that incontinently and at once reduces to subjection the great power, that was beyond the ken even of Brahma, Rudra, Sukadeva, Nárada, Bhishma and the other divine personages.

4. I call to mind the dust of the feet of Rádhiká, which the noble milk-maids placed upon their head and so attained an honour much desired by the votaries of the god with the peacock crest, dust that like the cow of heaven yields the fullness of enjoyment to all who worship with rapturous emotion.

5. Glory to the goddess of the bower, who with an embrace the quintessence of heavenly bliss, like a bountiful wave of ambrosia, sprinkled and restored to life the son of Nanda, swooning under the stroke of Love's thousand arrows.

6. When will there visit us that essence of the ocean of delight, the face of Rádhá, with sweet coy glances, bewildering us with the brilliancy of ever twinkling sportive play, a store-house of every element of embodied sweetness!

7. When shall I become the handmaid to sweep the court-yard of the bower of love for the all-blissful daughter of Vrisha-bhánu, among whose servants oft and again every day are heard the soft tones of the peacock-crested god?

8. O my soul, leave at a distance all the host of the great and affectionately hie to the woods of Brindaban; here Rádhá's name is as a flood

of nectar on the soul for the beatification of the pious, a store-house of all that is divine.

9. When shall I hear the voice of blessed Rádhá, that fountain of delights, crying 'Nay, nay,' with knitted brows, as some gallant suitor, fallen at her feet, begs for the rapturous joy of her embrace?

10. When, oh when will Rádhiká shew me favour, that incarnation of the fullness of the ocean of perfect love, the marvellous glory of the glistening splendour of whose lotus feet was seen among the herdsmen's wives?

11. When shall I attain to the blissful vision of the goddess of the blooming bowers of the woods of Brindaban, her eyes all tremulous with love, and the different members of her body like the waves of an overflowing ocean of delight?

12. O queen of Brindaban, I betake me to thy lotus feet, fraught with the honeyed flood of love's ambrosia, which, planted in Madhu-pati's heart, assuaged by their grateful coolness the fierce fever of desire.

13. Fain would my soul loiter in the woods sacred to Rádhá's loves, where the sprays of the creepers have been plucked by Rádhá's hands, where the fragrant soil blossoms with Rádhá's footprints, and where the frequent birds are madly garrulous with Rádhá's praises.

14. When, O daughter of Vrisha-bhānu, shall I experience the conceit induced by excess of voluptuous dalliance, I your handmaid, charged with the message, 'Come and enjoy Krishna's dainties,' and answered with the smile, 'Only stay, friend, till night comes.'

15. Ah! when shall I behold Rádhá, with downcast eyes, bashfully stealing a distant glance at the moon-like orb of the face of the lord of lovers, as she trips with twinkling feet, all graceful in her movements, to the music of her own bangles?

16. When, O Rádhá, will you fall asleep, while my hands caress your feet, after I have tenderly bathed you and fed you with sweet things, wearied with your vigil through a night of dalliance, in the inmost bower, in the delicious embrace of your paragon of lovers?

17. O that the ocean of wit, the singular ocean of love's delights, the ocean of tenderness, the ocean of exuberant pitifulness, the ocean of loveliness, the ocean of ambrosial beauty and grace, the ocean of wantonness, blessed Rádhiká, would manifest herself in my soul!

18. O that the daughter of Vrisha-bhānu, looking up all tremulous and glistening in every limb like the flowering *champa*, would clasp me in her arms, charmed by my chanted praises of Syām-sundar, as she listens for the sound of his pipe!

19. Blessed Rádhiká, cool me with the multiplicity of love, that breathes in the swan-like melody of the girdle that binds your loins red-

dened with dalliance, and in the tinkling of the bangles, like the buzzing of bees, clustered round your sweet lotus feet.

20. Blessed Rádriká, wreathed with the surge of a Ganges wave of heavenly dalliance, with lovely lotus face and navel as a whirl in the stream, hastening on to the confluence with Krishna, that ocean of sweetness, draw near to me.

21. When, O blessed Rádriká, shall I rest upon my head your lotus feet, Govinda's life and all, that ever rain down upon the faithful abundant torrents of the honeyed flood of the ocean of perfect love?

22. When, O Rádhá, stately as an elephant in gait, shall I accompany you to the bower of assignation, to shew the way, bearing divinely sweet sandal wood, and perfumes and spices, as you march in the excitement of love's rapture?

23. When, O blessed Rádhá, having gone to some secluded slope of the Jamuná and there rubbing with fragrant unguents your ambrosial limbs, the very life of Love, when shall I see your prince of lusty swains, with longing eyes, mounted on some high *kadamb* tree?

24. When, O blessed Rádriká, shall I behold your heavenly face, clustered—as if with bees—with wanton curls, like some lotus blossoming in a lake of purest love, or a moon swelling an ocean of enjoyment, an ocean of delight.

25. Ah! the name of Rádhá, perfection of loveliness, perfection of delight, sole perfection of happiness, perfection of pity, perfection of honeyed beauty and grace, perfection of wit, perfection of the rapturous joys of love, perfection of all the most perfect that my soul can conceive!

170. O ye wise, if there be any one desirous of marvellous happiness, let him fill the pitcher of his ears and drink in this panegyric, called the *Rasa-sudhá-nidhi*, or 'Treasury of Love's delights.'

Buland-shahr, April 15th, 1878.



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Part I.—HISTORY, LITERATURE, &c.

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The Song of Mánik Chandra.—By G. A. GRIERSON, C. S.

Introduction.

In my notes on the Rangpur dialect, I promised to give an account of the song whose name heads this article, and that promise I shall now do my best to redeem. I find, however, that the task has been more difficult than I anticipated. I do not doubt but that king Mánik Chandra, and his terrible wife did once exist; but the traditions current concerning him run so counter to ascertained history, that I have been able to discover very few grains of truth amongst the legendary chaff that has accumulated about his name.

To begin with; the first name we meet with is a crux. Mánik Chandra's brother was a *Pála* king.

Mánik Chandra himself was certainly not a *Pála*, for he was a *banigá* by caste, while Abul-Fazl describes the *Pálas* as *Kayasthas*.* Moreover, I know of no dynasty of *Pála* kings, containing names ending in "Chandra," like Mánik Chandra, Gopí Chandra, or Bhava Chandra. The brother's name was Dharma Pál.

The following account has been drawn from various sources. I have consulted BUCHANAN throughout, and wherever his story differs from mine in important particulars I have recorded the points of disagreement.

* Cf. however, Mr. Westmacott's article on the *Pál* Kings, in Vol. LIX of the *Calcutta Review*, on which I have drawn freely, and gratefully, while treating on the present subject.

In the *Dimlá Thánd* situated to the north-west of Rangpur, and nine or ten miles to the south-east of the sub-divisional head quarters of *Bág-dokará* is the city of Dharma Pál. Buchanan thus describes it—"It is in the form of a parallelogram, rather less than a mile from north to south, and half a mile from east to west. The following sketch (Fig. 1) taken in riding round it, will enable the reader more easily to understand it than my account.* The defences consist of a high rampart of earth, which at the south-east corner is irregular, and retires back to leave a space that is much elevated, and is said to have been the house of the Rájá's minister (*Diván-khána*). On the east side I observed no traces of a ditch, nor gate; but a ditch about 40 feet wide surrounds the other three faces.† In the centre of each of these is a gate defended by outworks, and in these are a good many bricks. At each angle of the fort has been a small square projection, like a sort of bastion, extending however only across the counter-scarp to the ditch; and between each gate and the bastion at the corner are some others of similar construction. The earth from the ditch has been thrown outwards, and forms a slope without a covered way. At the distance of about 150 yards from the ditch of the north-east and south sides, are parallel ramparts and ditches, which enclose an outer city, where it is said the lower populace resided. Beyond these on the south is another enclosure, in which it is said the horses were kept. Parallel to the west side of the city, at about the distance of 150 yards, runs a fine road very much raised; but its ends have been swept away by changes that have taken place in the rivers."

To the west of this city at a distance of two miles, was the city of Mánik Chandra, now, however, called, after his more famous wife *Mayaná Matir koṭ*.‡

Here Mánik Chandra reigned over the half dozen square miles of territory which constituted him a *rájádhirája*. His wife Mayaná was deeply skilled in magic, an art which it appears in those days, though unlawful for a man, was lawful for a woman.§ She was (so says the legend) the pupil of a mighty magician who by his intense devotion to and abstraction into the Holy Name had acquired immense powers. His mere word was sufficient to strike one dead. He could cause the sea to cease to move,

* The plan given is Buchanan's, and is very fairly accurate. The city is noted for containing within the inner walls three remarkably fine tanks.

† The ditch and rampart are called in Rangpur the *Koṭ* (कोट अर्थात् बड खाव खापिया मतिकार हथत् रकटा गड़) G. A. G.

‡ मयना मतिर कोट. This lady is said to have founded several other important towns. Amongst names which still survive I may mention *Mayaná talir hāt* (मयना तलीर हाट) and *Mayaná Guḍī* (मयना गुड़ी)

§ See verse 60 of the poem.

and the lights in his dwelling burnt with surpassing splendour, though only fed with Ganges water.

Now this man was a sweeper.

The Hádī Siddha.

He was a *Hádī*, the caste which acts as sweeper in Bangál. In Rangpur its impurity signifies nameless abomination, a fact which should be specially noted. Rangpur forms part of Kámarúpa. Hither one of the five *Pándavas* never set his foot, and the land is consequently impure. Its men are not as other men, nor its laws as other laws. It has a special code of its own, most of which can be found in the *Yoginí Tantra*; and this law allows many things (such as certain kinds of flesh eating) to its straitest sects of Bráhmaṇs. Hence impurity in Western India frequently becomes purity in Rangpur; while Rangpur impurity includes things simply inconceivable in *Arya varta*.

The Hádī of the poem, and of the popular legends of the present day was a *Vaiṣṇava*; and as Mayaná was also of the same sect (in which the members are practically all of one caste) it is not impossible that she should have had such a man for her Guru.

I say only "not impossible," for I consider it highly improbable, and for the following reasons:—It is evident that the true story has been much transformed in its passage from mouth to mouth, and I believe that the principle recasting (if I may call it so) was due to the influence of the *Vaiṣṇava* followers of Chaitanya. Translated into common English the story is that Mayaná's chaplain was a man of remarkable sanctity, whom the populace credited with supernatural powers. He was a great saint, and his religion followed that of his historians. The *Yogís* who narrate his history are at the present day followers of the teachers of the religion of Viṣṇu (not, be it observed, the popular *Vaiṣṇavas*, *vulgo Boishṭoms*); and they naturally claimed their hero as belonging to their own sect. It is peculiarly the tendency of this beautiful, almost Christian, religion to preach the doctrine of the equality of castes;—how every valley shall be exalted, and the rough places made smooth. The lowest amongst the low,—the despised and rejected amongst men, is fully capable of attaining equal holiness with the strictest Bráhmaṇ of the holiest sect which worships at the shrines of *Vṛindávana*. Such being the case, what is more natural than that the ignorant and illiterate members of the same religion, who (like the *Yogís*) have the traditions of a missionary priesthood in their family, should instinctively point out how even an abominable Hádī can attain the terrible powers which their fathers attributed to a *Vaiṣṇava* or to a *Durvása*.

But, now that I have shown that it is quite possible for such an idea to have arisen, I would point out that the man who is now called the

Hádi Siddha cannot have been originally a *Vaishṇava* at all, and was never by caste a Hádi. He is still occasionally addressed as Haripa (not Háḍipa, or Hárípa), which is quite a possible name for a follower of Hari; but on going back even so short a space as the first decade of the present century, we find that Dr. Buchanan, whose powers of observation are unquestioned, describes the Guru of Mayaná Mati as a *Yogí* by caste, whose name was Haripa while he never once mentions the fact of his being Hádi, which is now much the commoner name. Now in the Rangpur dialect, *a* is frequently lengthened, and *r* is interchangeable with *ḍ* so that the change from *Hari* to *Háḍi* is easy, and such a change, having once taken common currency, would have itself suggested the idea so peculiarly *Vaishṇava* to which I have before alluded. (Cf. Max Muller's lectures on the science of language, for evidence as to the tendency of false etymology and of phonetic decay in originating popular legends.) This Haripa, according to Buchanan was the pupil of Kanipa,* who was the pupil of Gorakshanáth. Tháná Dímá, where these *Yogís* live, is close to Nipál, and we must go there to find out who Gorakshanáth is. I am now writing in Supaul, in the north of Bhágulpur, and not twenty miles from the Nipál frontier; and what I have heard about him here, confirms in a remarkable degree what Buchanan tells of him. The dwellers of the low lands will have nought of him, and we do not find his *cultus* till we reach the half savage Buddhist dwellers of the interior. Here we discover a curious mixture of the *Mahá Bhārata* and Buddhism. They say that during Yudhishṭhira's journey through the pathless tracts of the Himálaya to heaven, his brethren (as we know) fell behind, one by one, and perished miserably. Here, adds the Nipálí, only one survived,—the club-bearing Bhíma. He was saved by a Buddhist saint called Gorakshanáth who after performing many wondrous acts made him king over Nipál.†

* I know of no religious teacher called Kanipa. There was a Kanapa, who was a teacher of the *Jamgama* sect of the S'aivas, (Mackenzie *apud* Wilson I. 227), who was of some celebrity, and it is just possible that his name may have been adopted by the *Yogís*, who were originally a Saiva caste.

† The above is the popular tradition I have gathered from oral accounts. The following summary of what is noticeable about Gorakshanáth and the *Yogís* is gathered principally from Wilson.

The first teacher of Buddhism in Nipál, was Manju, who came from Maháchin and who made the valley of Khatmánḍu, formerly a lake, habitable by cutting through the mountains with his scymitar. He taught a pure form of Buddhism, which became afterwards impregnated with Bráhmaṇical ideas through the invitation given by Narendra Deva, king of Nipál, to one Matsyendra Náth a teacher of the *Páśúpata* form of the S'aiva religion. This was apparently about the 7th century A. D. This Matsyendra was in reality the Lokes'vara Padmapáni, who descended to the earth by command of the Adi Buddha, and hid himself in the belly of a fish, in order to overhear Síva teach Párvatí the doctrine of the *Yoga*, and Wilson shows that Padmapáni came either from the east or from the north of Bangál.

It is quite natural that the Buddhists should claim him as their saint, but in reality he was nothing of the sort. He was a teacher of the *Saiva* religion, and one of the reputed founders of the sect of *Yogís*. Whether the *Yogís* of Rangpur are an off-shoot of the Nipálí converts, or whether Gorakshanáth and his fellows came from north-eastern Bangál, or from *Asám*, where the *Páśúpata cultus*, whose followers finally became *Yogís*, was established I cannot pretend to decide. I am inclined to believe in the former hypothesis, for they themselves have a tradition, that *they came from the west*, having formerly been pupils of Sankarácárya, who were expelled by him for indulging in spirituous liquor. Besides, they reject, to the present day, the authority of Bráhmaṇs, and have their own priests; and this is just what would be expected from people coming from Buddhistic Nipál. They rose too to power under a dynasty of Pálas, most of the members of which family were Buddhists. Be that as it may, this much however is certain, that at the time of Mánik Chandra, the *Yogís* practised a *Saiva* religion and worshipped a deified teacher of their sect, also worshipped in Nipál, named Gorakshanáth. Gorakshanáth moreover, had already supplanted Siva himself, and was alone worshipped by his followers.

The poem annexed bears abundant witness to this. At every *Nodus* whether *Vindice dignus* or not, he is brought in as a *deus ex machina*;

Sixth in descent from Matsyendra Náth, in the time of spiritual teachers, comes Goraksha Náth, who, according to this, ought to have flourished in the 8th century. There must however be some mistake here, for it is known that Goraksha Náth was a contemporary of Kabír, and held a controversy with him which is extant (*Gorakh Náth ki Goshá*, W. I. 213), and Kabír lived in the 16th century. Hence, unless the list of teachers in the *Haṭha Pradípā* (W. I. 214) is incorrect, Matsyendra Náth must have lived at a much later period than that tentatively assigned to him by Wilson. Another Narendra Deva reigned in Nipál in the 12th century, and it is possible that it is he who introduced Matsyendra Náth, in which case the discrepancy would not be so outrageous. But, here another difficulty arises, we find that we must date Goraksha Náth's pupils' pupil as flourishing in the 14th century, a fact which agrees better with the theory of Narendra Deva II; but then, what becomes of Kabír?

We have seen that Matsyendra Náth taught *Páśúpata Śaivism*, and it is a well known fact that the *Kánpúrá Yogís*, to which sect those who sing the *Mánik Chandra* song belong, are the representatives at the present day of that form of religion. The above account in no way tallies with the tradition mentioned later on, in the text, that the *Yogís* were errant pupils of Sankarácárya, nor is such a story borne out by the *Sankara Vijaya*. In chapter 41, Sankara successfully combats the *Yoga* doctrine, but he treats his opponents with a respect which he would never extend to backsliding disciples (S. V. c. 41. Bibl. Indica, Ed. p. 198).

That the *Yogís* rapidly became an important sect is evident from the numerous temples dedicated to Goraksha Náth, not only in Nipál but in the Panjáb and North West Provinces. We read that the Emperor Akbar consorted with them. He was initiated into their learning, and, on one occasion, ate with them, at one of their festivals.

not as an ordinary saint, but leading the whole Hindú Pantheon, and the characters of the Mahábhárata to boot. It is Gorakshanáth, and not Siva, who grants a boon, or comforts a sorrowing widow on her husband's funeral pyre. As he is considered in Nipál, so he is here, a saint whose austerities have rendered him not only an omnipotent but The Omnipotent, and who has always been proof against the charms of the most wanton Apsarases ever sent for a holy man's seduction by a terrified *Svarga*. We are bound therefore to assume that the guru of the Lady Mayaná, whatever his name was, and whom for the sake of simplicity we can call the Siddha was a *Yogí*, i. e. a *Saiva* by religion, and professed doctrines which were professed also by semi-Buddhist races in Nipál.

As this introduction relates to the Mánik Chandra poem, I shall, now that I have stated my opinion concerning his identity, for the future call him as he is called in the modern edition of the poem, the Háqi Siddha.

Dharma Pála.

The Háqi Siddha was, as I have already said, of great power, but his pupil Mayaná, by dint of continued practice of her magic art, became greater still. She could control everything but fate; and the whole of the poem is nothing but a description of her struggles with that resistless passive energy.

According to universal tradition both in Buchanan's time, and at the present day, her husband, Mánik Chandra was brother of Dharma Pála. This I have before shown, is an impossibility if the names are correct.

In order to obtain an approximate date for Dharma Pála it is necessary to consider two lists of dynasties. They are now-a-days the traditional history, and they agree with Buchanan's account. The following are those I have collected :

1. Dharma Pála.
2. Mánik Chandra (his brother ; died early).
3. Gopí Chandra.
4. Bhava Chandra.
5. A Pála Rájá. Name unknown.
6. Here Buchanan reasonably suggests a period of anarchy.
7. Níla Dhvaja.
9. Chakra Dhvaja.
10. Nílámbara.

According to Buchanan, Nílámbara was defeated by Husain Sháh about the year 1500 A. D. ; and thus, allowing six reigns to a century, (a moderate estimate), we must date Dharma Pál as having flourished



SUPPOSED TO REPRESENT VASU DEVA.

SON OF MANICK CHANDRA. Fig. 2.

about the year 1850 A. D. ; he certainly (if he ever existed, and if the dynasty lists are true) cannot have lived much before the commencement of the 14th century, *i. e.*, before our English King Edward III.

Abul-Fazl gives a list of ten Pála Kings quoted by Mr. Westmacott ; and they became extinct about the middle of the eleventh century thus leaving a space of 250 years to be accounted for. . Hence it need not necessarily be determined that Dharma Rájá was a member of the great family of Pála Kings. Buchanan suggests that he may have represented the remains of a family which survived the wreck of the dynasty, to save a portion of the kingdom which remained unconquered, by the successors of Ádi Súra in Rangpur ; and the fact is not rendered less improbable when we consider the history of the Hádi Siddha. We know that the Pála kings were, when we first meet them, Buddhists and that subsequently some branches of the family changed their religion to some one or other of the many varying sects of Hindúism. If then Dharma Pála ruled in a country in which such a holy man was arch-priest, it is rather a confirmation than otherwise of this theory. I myself think it certain that Dharma Pála was a member, or descendant of the great Pála family, for Dr. Buchanan gives an illustration of an image found in his city, which contains the typical Pála emblem of an elephant borne down by a lion. (Fig. 2.)

We thus I think can be certain of the following facts,—that early in the 14th century a king named Dharma Pála ruled over a small tract of country near the Karatoyá river in the present districts of Rangpur and Jalpaiguri. That this Dharma Pála was a member of the great Pála family which once ruled over northern Banga. That in his territory there was a saint of considerable sanctity, then living, who professed tenets borrowed possibly from Nipál. And that close to his capital city there lived in a fortified stronghold a powerful chief named Mánik Chandra, who was married to a lady called Mayaná. It may be gathered from local tradition that Mayaná was an ambitious and designing woman, and that she acknowledged the saint above-named as her spiritual instructor.

Between the king and the chief, according to local tradition, a war arose, which ended in the defeat and disappearance of the former, and triumph of the latter, in a great battle fought on the banks of the river Hángrigosha. The battle-field is still shown, a mile or so to the north of Dharmapur.

Ma'nik Chandra.

- * After this victory, Mánik Chandra took up his residence at Dharmapur, while the Lady Mayaná remained at her old home *Mayaná Matir kot*

probably to be near her old Guru, the ruins of whose home are still shown in the neighbourhood.

The further particulars regarding Mánik Chandra will be gathered from the annexed poem. Who he was we cannot tell, we must be content with knowing that he was a neighbouring chief of Dharma Pála and his conqueror.

He appears to have governed at first with vigour and success. We read of rustic wealth and security, and light taxation. The revenue system is worth noticing, it was a peculiarly elastic and simple land tax.* The land in those days was little more than a wild forest, and the soil poor and barely cultivated. The sparse *prajás* scraped with their flimsy ploughs the surface of the sandy soil immediately round their homestead and struggled lazily for bare existence. I suspect that, even in king Mánik's time, life and property were not over secure, and under these circumstances it was necessary that the taxes should be light. Each plough-owner was therefore required to pay for each plough in his homestead thirty *káoris* per mensem.† Under the light taxation which may be inferred from this absurd exaggeration of the text, the *prajás* were necessarily happy and contented, until Mánik Chandra did what was in Rangpur the most unpopular thing a zamíndár could do. He engaged a Bangáli Diván. I have in my previous paper enlarged on the hatred of the Rangpurí peasantry for a genuine freshly imported native of the south, and I need not dwell upon it here. Suffice it to say that the new Diván fully bore out the character of his nation, for he immediately doubled the land-tax. The result was a rising of the peasants, and according to their account, the mysterious death of the king shortly afterwards from the effects of Rangpur fever. He left no living child, but his wife Mayaná was subsequently confined of a posthumous one. The child was not born till eighteen months after Mánik's death,—and ill-natured people might feel inclined to consider Mánik Chandra's claim to the title of father not proved; but the poem chivalrously comes to the rescue of Mayaná's reputation, and makes her pass through a long series of puerile adventures (the old tale of Orpheus and Eurydiké with the characters reversed), and finally obtain from Gorakshanáth, and his attendant gods, the boon of having a son of such perfect vigour and

* The same system prevails to the present day in parts of Nipál, where the demand for land is not so great as it is in the more settled British territory. A plough is there, however, only considered as equivalent to eight bigas, the average rent for a plough of land being considerably below that current on this side of the frontier.

† The text says $1\frac{1}{2}$ *buḍis* of *káoris*. A *buḍi* is five *gandas* or twenty. One *buḍi* of *káoris* = a pice. $1\frac{1}{2}$ pice a month = 4 *ánás*, 6 pie, per year per plough. In the light soil of Rangpur, one plough can easily cultivate fifteen *bigas* or five acres of land, so that the annual land-tax was, according to the text, less than 8½ pies per *biga*, or than a penny farthing per acre.

virtue that it would take at least twenty-five months to fashion him. As a matter of special grace he was presented to her with seven months of his growth already accomplished, so that he was in fact born only eighteen months after his conception.*

During Mayaná's pregnancy she became *sati* for her dead husband, and mounted the pyre with his corpse. I need hardly say that the flames refused to touch her, although the relations of her late husband did their best to aid them, by thrusting her more and more into the flames with long poles.†

Mayaná after passing through various adventures survives them all, and in due time gives birth to a son, who is called Gopí Chandra. It is he who is really the hero of the poem, and not his putative father who gives it his name. All references to the latter end before the 154th verse, and the remaining 550 narrate the fortunes of his son.

Apparently from the birth of her child, Mayaná deserted Mayaná matir koṭ and went to dwell in Dharmapur. She was a clever woman and managed to keep up without great difficulty the high rates of land revenue, which had caused the death of her husband.‡ When Gopí Chandra was nine years old, it was time for him to be married, and so Mayaná looked round for a suitable match.

Raja' Hari's' Chandra.

At the present day, seven or eight miles south of the ruins of Dharmapur, in the tháná of Darváni, there is a village called Char Chará.§ Here there is a large mound of earth called Harís Chandra Rájár Pát, i. e., the seat of king Harís Chandra.

Buchanan described it as a circular mound of earth about 40 feet in diameter. "In searching for materials to build a pig-stye, the heap was opened by an indigo-planter, and a building of stones was discovered. The

* The Yogis of course see nothing extraordinary in this ludicrous idea. They say the events occurred in the *Satya Yuga*, when all things were possible. I asked a Yogi once why the child was presented to Mayaná already seven months developed, and he explained that it was "to prevent excessive scandal," which might have occurred if the child had been born twenty-five months after his father's death!! This is straining at a gnat, and swallowing a camel with a vengeance.

† The description of this rite in the poem is curious enough: whether such conduct on the part of the relations was common in the performance of it I do not know. I have been unable to identify Chánd the merchant, who figures in this part of the poem with any other legend.

‡ I gather this from the last verse of the poem, from which it is evident that it was not till Gopí Chandra's return that the land revenue was reduced to its former level.

§ चर चरा, it is a short distance due east of the better known रामनक्ष कुपामादि Rámangaj Túpámári.

upper parts of this, consisting of many long stones, were removed, when a friend of more science in antiquities, recommended the planter to abstain from further depredations. In its present state the lower part only of the building remains and is a cavity of about 13 feet square at the mouth, and 8 at the bottom. The sides are lined with squared stones, which form a deep stair on each side, and the walls are exceedingly thick. My description will be more easily understood by consulting the plan (fig. 8). I have no doubt that this is a tomb."

Since Buchanan's time it has been still further desecrated, and, now, little remains beyond the mound of earth and the name.

Harís Chandra had two daughters Aduná and Paduná.* These he gave in marriage to Gopí Chandra with a hundred maid-servants to wait upon them.† By his eighteenth year Gopí Chandra had no child. It had been foretold to Mayaná that at that age he would die unless he became a Sannyási.‡ So he prepared, much against his will, to go forth wandering in the forests with the Hádi Siddha. His two wives Aduná and Paduná tried hard to persuade him to stay, and their arguments form, in my opinion, by far the best portion of the poem (vv. 243-302). They contain many touches of true poetry.

This flight of fancy, however, almost immediately leads us into the most unnatural—the profoundest bathos. The king tempted by his wives, in order to put the correctness of his mother's words to the test, makes her pass through the ordeal of boiling oil. Although the king has strength of mind to keep his mother in boiling oil for nine days, it is gratifying to learn that he really was a tender and affectionate son; for when he found at the expiration of that time that his mother had been boiled to death, he began to weep. Mayaná of course was really not dead, she had only changed herself into a grain of mustard seed, and soon reappeared in her proper form. After the usual preparations, the king sets out on his journey with the Hádi Siddha. His minor adventures need not be recorded here. He passed through many trials as preparations for his future, and finally in an evil moment promised to let the Hádi have twelve *kāorís* wherewith to buy *gánjá*. When he would have given it, he found that the store from which he intended to take it had been spirited away. Thereupon, rather

* In Buchanan, Hudna and Pudna.

† Buchanan says that Gopí Chandra had a hundred wives, but I can find no trace of this in any modern legend. The maid-servants may have been concubines, but not wives. They are the hundred damsels mentioned in verse 242. They are it is true called queens in verse 410,—but that is only part of the gross and puerile exaggeration displayed there, Aduná and Paduná being still kept separate.

‡ V. 241. The term Sannyási should be noticed. It is the ordinary term for a Saiva mendicant, Vairági usually representing a Vaishnava one.

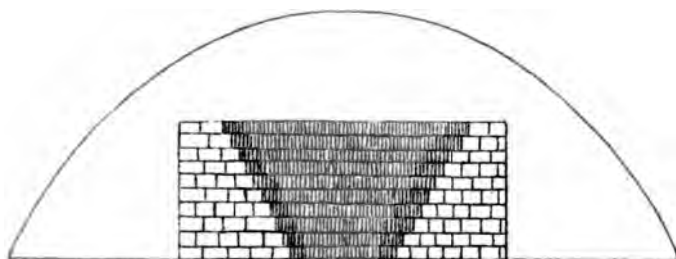


Fig. 3.
Hari Chandra Raja's Tomb.

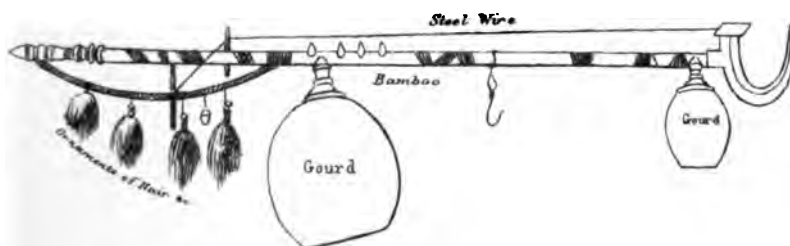


Fig. 4
Sarmga or Tambura.

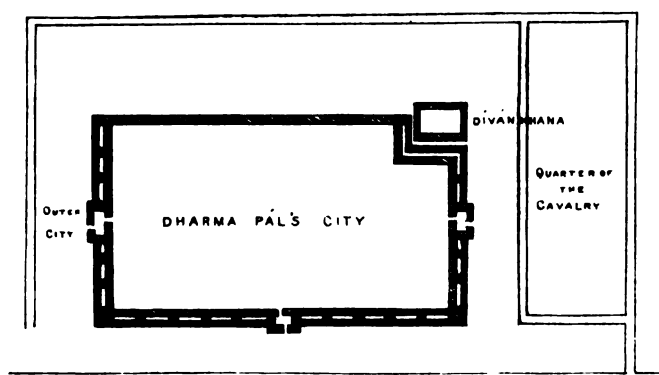


Fig. 1

than break his promise, he told his companion to pawn him for the money. The Hádi took him at his word to the *bázár*, where all the women fell in love with him, which gives rise to an amusing scene. However they could not afford the twelve *káoris* demanded ; so the Hádi finally took him to the house of a harlot named Hírá.

Hírá' the Harlot.

According to popular tradition, Hírá is said to have lived at "Kholá Kuṭá a village in the west of the Dinájpur District." This place I have been unable to identify. Mr. Westmacott, who has most kindly taken much trouble in assisting me on this point, suggests that the place may be Kholá Háṭi, a village in the east of that District, where the Dinájpur and Rangpur road crosses the river Karatoyá. There were lately extensive ruins to its north, but they have been excavated by the Northern Bengal Railway people for ballast. This theory is not at all so improbable as it might seem at first sight, for every tradition leads us to believe that Hírá's residence was near the Karatoyá. Dinájpur is to the west of Rangpur, and if the original belief was that Kholá Kuṭá (? Kholá Háṭi) was "to the west in Dinájpur" the change for "in" to "of" need not surprise us. The locality of Hírá's house is not mentioned in the poem, but a reference to v. 658 will show that it probably was Kholá Háṭi.

Hírá, of course, fell in love with the king, and, being a woman of property, easily found it in her power to borrow the twelve *káoris* from a neighbouring banker. The banker drew up the deed of transfer, conveying Gopí Chandra to the harlot's sole use and possession for a period of twelve years, and she then and there paid over the money, and took delivery. The procedure of the sale is worth noticing (vv. 537-546).

After obtaining possession of the king, Hírá had him bathed and adorned in gorgeous apparel ; she then sent for him and tried to tempt him, but though she exerted all her fascinations, and the king was almost yielding, she failed ignominiously, Gopí Chandra piously remembering his mother's parting words.* Indignant at her repulse the harlot went to the other extreme, and put him to perform the meanest and vilest offices of her household. The king was continually ill-used, and beaten, and one of his hardest daily labours, was carrying twelve *bhángi* loads of water from the Karatoyá to her house.

On the last day of the twelve years he went to draw water as usual,—but his strength failed him and he fell into the river.

* Gopí Chandra is much lauded for his continence, but, as it appears that the Hádi before leaving him made him a neuter, there is really little ground for credit.

The beginning of the end.

When the king left his home, his two queens retired from the outer world and shut themselves up in a well-guarded palace. The hundred concubines appear to have become the willing property of a foundling called Khetu, whom Mayaná had cherished and brought up together with her son. This man had subsequently entered Gopí Chandra's service, in the days of his power.

Aduná and Paduná set themselves to playing dice, for they knew that as long as lucky numbers were thrown, the king their husband was well.

The dice continued to fall prosperously until the king fell into the Karatóyá, and then they fell in disarray. A parrot and his mate beheld the tears of their mistresses, and consoling them, offered to go in search of Gopí Chandra.

After some days* the birds found their master, and gave the message of his queens. The king, thereupon wrote a letter on the leaf of a wild plant which grew by, and sent it by them to his mother, who on receiving intelligence of her son summoned the Háđi, who in his turn went to the king.

The Háđi then proceeds to distribute poetical justice all round. All the woes which Hírá had inflicted upon Gopí Chandra, she is made to suffer herself. He then cut her in two, her upper half becoming a bat, and her lower half a minnow.

The Harlot's maid-servant was cursed to become as her mistress had been, and in her old age to marry a peon, who would beat her every day of her life. Finally we have the fruit of all the king's penance in his being imbued with a knowledge of the magic art by his eating a filthy mess of the Háđi's concoction, and he returns home, still however wearing his pilgrim's weeds. His maid-servant was the first to see him, but she did not recognize him. His own wives wavered in their recognition when he denied his identity. The only being that did not hesitate, was his faithful elephant who made obeisance to him while he was yet afar off.

After the usual festivities Gopí Chandra again ascended the throne, and made his subjects happy by fixing the land revenue again at the old rate of thirty *káorís*.

Concluding remarks.

Such is the epic of Rangpur, containing here and there a tiny pearl of interest, hidden amidst the rubbish, which is mainly presented to our view. I have ventured to write so much about it, and to submit it to the Society for three reasons.

* There is considerable confusion here amid dates.

First, I believe that men more competent than I, may be able to add a little to the history of the Pála kings, after considering it. Second, because it exhibits a curious, and most instructive lesson as to how a purely Saiva hero celebrated by men of a Saiva sect has given rise to a poem of Saiva foundation, but of Vaishnava superstructure, and sung by the descendants of these same men. Nay more, how a distinctly Saiva sect, has become to all intents and purposes a Vaishnava one, while it still retains its old gods, and its old heroes. It would not be difficult to find parallel transformations in more modern religious history. Thirdly, and more for this reason than any other, because it is a very fair specimen of the peculiar Rangpurí *patois*. And here it may be noticed, that any parts purely and distinctly Vaishnava interpolations or additions (*e. g.* the introductory lines) are written in a Bengálí much more classical, than the rude language of the Saiva ground-work. This will be evident to any one who pays attention while reading.

The song is usually sung by four men,—and in parts, not in unison. I am not sufficiently acquainted with Hindu music to give the technical name of the chant. It certainly is the only song I have heard in this country in which harmony is introduced. The top notes of the chant are as follows:

To be sung an octave lower than written.



This is sung chant-like, so as to go once to each line, but leaving the three last notes without words. To these last three notes, the words "He! Rájá!" "He! Mayaná!" "He! Yame!" or some such apostrophe which depends on the person whose adventures are being immediately narrated, are sung as a sort of burden. An example will make this clear. Take the first line of verse six. It is sung thus—

Svo Basso



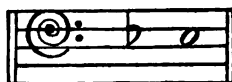
manikchandra raja banga bá-da sa- ti He rá- já

I do not give the harmonies of this, because I cannot. I tried to reproduce them on a harmonium, but though I believe I got the separate notes of each part correctly first on a violin, from the mouth of each

singer, when I tried them together I got nothing but a common-place sort of chant, containing one or two consecutive octaves, and not a particle of the spirit of what I had just heard sung. The above is the music of the narrative portion of the poem. Each "*duyá*," has a separate melody of its own.

As the song is sung, the upper part is accompanied in unison on the *saringa*, of which an illustration, taken from Buchanan is appended.

(Fig. 4.) The open note is tuned to E flat



and the higher notes are formed by pressing down the wire on the various projecting knobs over which it passes.

In conclusion, as I stated in my former paper, the poem is in many places unintelligible to every body I have met. In such places (*satya yuger kathás*) the singers have sometimes traditional interpretations. In one or two cases, however, they do not profess even to such: and, I trust, that I may be pardoned under such circumstances for giving a literal translation, without attempting to educe sense out of the arrant nonsense thus arrived at.

मानिक चन्द्र राजार गान ।

भाविस्यो रामेर नाम चिन्तिष्यो एक मने ।	
कहखे रामेर नाम कि करिवे यमे ॥	१
अधमे ना नैल नाम जीमेर आलिसे ।	
अमृतेर भाख तनु गरासिल विषे ॥	२
हेटे याइते ये जन रामेर नाम जय ।	
धनुक वान कैया राम भक्त सङ्गे याय ॥	३
राम नामेर नौका खान श्रीगुरु काखारी ।	
दुइ बाऊ पसरिया डाके आस पार करि ॥	४
रामेर वन्दन कहल मस्तक उपर ।	
धुइया रामेर गुन सिद्धार गुन गाइ ।	
याके वन्दिषेइ सिद्धि पाइ ॥	५
मानिक चन्द्र राजा वङ्गे वड़ सति ।	
हाल खानाय मासड़ा साधे देड़ वुड़ि कड़ि ॥	६
देड़ वुड़ी कड़ी जोके खाजना योगाय ।	
अष्टमि पुजार दिने पांठा गोटे खय ॥	७
खड़ीवेचा हैये ये खड़ी भार योगाय ।	
तार बदली कय मास पाण खाय ॥	८
पातवेचा हैये ये पात आटि योगाय ।	
तारे बदली कय मास पाण खाय ॥	९
ऐत मानिक चन्द्र राजा सबया नाखेर बेड़ा ।	
एकतन येकतन कैरे ये खाइके तार दुयारत घोड़ा ।	
दिने वान्दि नाहि पिन्दे पाटेर पाछड़ा ॥	१०
कारो माड़ान केह ना याय	
कारो पुष्कगीर जन केह ना खाय ॥	११

१ । यमे । The usual form for Nom. Sing. in Rangpurí. See my "Notes." Most of the irregular grammatical forms contained in this poem will be found therein, and hence I shall not usually draw attention to them here. ॥ १ । जीमेर आलिसे = जिमेर आलिसे । गरासिल = पास करिल ॥ ४ । पसरिया = प्रसरिया । १० । एकतन येकतन = समन येमन, अर्थात् येमन तेमन । दिने वान्दि = दृष्टा वान्दिता, अर्थात् दृष्टा करिया ॥

आवाज यमके हाकिवार जागिल ।

गोदा यमेर नामे चिठि हाथोलात कैरे दिस ॥

४०

तोक बलौ गोदा यम बाक्ख मोर धर ।

हाते गले मानिक चन्द्र राजाक बान्हिया हाजिर कर ॥

४१

आमेर दड़ि जोहार डाङ्ग नैले गिरो दिया ।

तखने गोदा यम चलिष हाठिया ॥

४२

कत दुरे येये गोदा कत पाछा पाय ।

कतक याइते मानिक चन्द्र राजार बाड़ी पाय ॥

४३

छय मासेर काहिला राजा मइसेर भितर ।

तखोत खबर नाहि करे मयना सुन्दर ॥

४४

तोक बलौ ये नेफ्फा पात्र बाक्ख मोर धर ।

एइ कथा जानाओ गिये मयनार वरावर ॥

४५

छय मासेर काहिला राजा मइसेर भितर ।

देखा कैरवार चाय राज राजेन्वर ॥

४६

ए कथा मुनिया नेफ्फा ना थाकिष रैया ।

मयनार मइसे चलिष हांठिया ॥

४७

आग दुयारे मयना मति पसार खेलाय ।

खिरकिर दुयारे दिया परनाम जानाय ॥

४८

केने केने नेफ्फा आइलेन कि कारन ॥

४९

नेफ्फा बले खोन मा खोन समाचार ।

छय मासेर काहिला राजा मइसेर भितर ॥

देखा कैरवार चाय राज राजेन्वर ॥

५०

धेयाने मयना मति धेयान कैरे चाय ।

धेयानेर मध्ये यमेर नागाल पाय ॥

५१

आनिष बाङ्गला गुया मिठाभरि पान ।

ऐ बाङ्गला गुया काटाइर दिया करे दुइ खान ॥

५२

पानेर वुके चुनेर नेओया दिया ।

हेट खिलि उपर खिलि माइसे तुलिया ॥

५३

घोष पुटि ज्ञान दिसे खिणित भरिया ।	
पानेर वाटा वान्दिर माथाय दिया ॥	५४
निकाणिन मयना मति यात्रा करिया ।	
ऐ राजार महाले उत्तरिल गिया ॥	५५
केने केने महाराजा डाकिले कि कारन ॥	५६
हय मासेर काहिला राजा महलेर भितर ।	
तत्त खवर ना करेन मयना सुन्दर ॥	५७
मयना वले सोन राजा राज राजेश्वर ।	
आमार सरीरेर ज्ञान नेओ वेण सिक्किया ।	
आमार वसेर नदी कन्दे यावे सुखाइया ॥	५८
आमार वयसे वड़ वल्ल यावे मरिया ।	
दुइ जने राजा कि करिम घर जुयान हइया ॥	५९
राजा वले सुन मयना वाक्क मोर घर ।	
एखनि मोर मानिक चन्द्र यमे लइया याउक ।	
ताइतेओ स्त्रीर ज्ञान गरवे ना सुनाउक ॥	६०
नारीर ज्ञान देखिया ज्ञाने करिल हेला ।	
ठिक दुपर भाकुया यम करिया गेण मेला ॥	६१
मरन हसा मारिल तुलिया ।	
जल जल वलिया राजा उठिल कान्हिया ॥	६२
जल खोओओ खोओओ मयना सुन्दर ।	
एक भाड़ि जल दिया प्राण रक्षा कर ॥	६३
एक सत रानी आळे महलेर भितर ।	
तार हाते जल खाओ राज राजेश्वर ॥	६४
एक सत रानीर हसेर जल आइस टानि गोन्दाय ।	
तोमार हाते जल खाइले वड भाग्य हय ॥	६५

५८ । वसेर = वयसेर । कन्दे = कल्ल ॥ ६० । गरवे = गर्भ ॥ ६१ । दुपर =
दुइ प्रहर ॥

हवायु यदि आभि बाह अलख नामिया ।
हेत भाङ्गुया यम तोख कहवा बाबे बान्धिया । ६६

राजा वखे सुन मयना बाक्क मोर घर ।
सैब पाठेर खाड़ा घोखो विकानात खेबाया । ६७
यखन आसिने भाङ्गुया यम दैत दानव हया ।
तैब पाठेर खाड़ा दिया खेबामु काटिया । ६८
येन मते मयना मति हस्ते भाङ्गि सैब ।
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ये जीउ निखे मोदा यम नांठित बान्धिया ।
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एक भाङ्गि वदलि विद्याल्लोस भाङ्गि जखो ।
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८१. स्यामि = सामी ॥ ८६. बहरत = बहरे ॥ ८८. किराने = کناری ॥
 ८९. सरन = सरण ॥ ९०. दरिया = دریا ॥

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ऐठे हइते गोदा यम दिसा हारा हइल ।	
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८४। ओभा = उपाधायक ॥ ९६। गुकाइल = लुकायित हइल ॥ ९८। एकतर = एकच । मुरत = मूर्ति ॥ ९९। राखो = रख ॥ १०१। नि = लइया ॥

ऐत गोदा यम आठिया बज्जर ।	
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ऐटे हइते गोदा यम दिख हारा हइल ।	
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ऐटे याया गोदा यमक धरिल ठासिया ।	
छेनेक छेनेक करिया यमक उठाइल ठानिया ॥	११९

ओ रूप चुइल मयना एकतर करिया ।	
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किजाइते किजाइते हात हापसाइल ॥	
चितर करिया फेलाइया यमक नेदावार काजिल ॥	१२१
ऐत गोदा यम आठिया बज्जर ।	
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ऐटा हइते गोदा यम दिस हारा हइया ।	
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धेयाने मयना मती धेयान कैरे पाय ।	
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बिलाइ रूप हइल मयना सुरत वदनाइया ॥	१२७
एक बिजाइर वदनी वियासिस बिजाइ हइया ।	
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टरकिया याया मयना मती गरमानात धरिल ॥	१३०
ऐत गोदा यम आठिया बज्जर ।	
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एखार ठाल लइल आसा करिया ।	
सेवार बाड़ीक नागिया गेल चनिया ।	

यत वैष्णवेर मध्यत रहल बसिया ॥	१३४
धेयाने मयना मती धेयान कैरे जाय ।	
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सेवार बाड़ीक नागिया गेल चलिआ ।	
यत वैष्णवेर माथार उपर वेड़ाय घुरिया ॥	१३७
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कोन वैष्णव अपराधी आक्केन सभार माभ ॥	१३८
येन मते गोदा यम माछि देखिल ।	
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येन मते मयना मति सन्दान देखिल ।	
उड़ाओ दिया यमेर घाड़त पड़िल ॥	१४०
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एक पांजा एलुया खेड़ आनिल उकड़िया ॥	१४३
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मयनार कमड़े यमेर कमड़े वान्दने वान्दिया ।	
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आमार पति नाह घरे रे दीननाथ	
आमि कार कछे खरे नविन बसते ॥ धुया ॥	१४७

१३६ । मौ माछि = मधु मच्छिका ॥ १३८ । माभ = मध्ये ॥ १४१ । सहवार = सहचार ॥ १४४ । बान = बाणायुग्न = हाथंआमन । तेपथीत = निपथे ॥

तुङ्ग तुङ्ग करिया मयना ऊङ्गार छाड़िष ।	
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छेकि वाहने नामिष नारद मुनिवर ॥	१४९
बासायार पिठिस नामिष भोषा महेखर ।	
धनुक बाने नामि गेण खोराम कछन ॥	१५०
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आमार स्यामि धनक ना देव छाड़िया ।	१५३
गोरक नाथ वखे सोन सोमाचार ॥	
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मयनाक आसीव्वाँद देव ॥	१५४
या या मयना तोमाक दिक्काम वर ।	
सात मासिऽछेने हौक उदरेर भितर ॥	१५५
येन मते मुनिगन आसीव्वाँद दिख ।	
खोणार मत आछिष सरीर कने भारि हइया गेण ॥	१५६
आठार मासे जन्म उनिस बत्थरे मरन ।	
सिताव करि भवे छाड़िष चरन ।	
रे गुन भजिले ना हवे मरन ॥	१५७
रे कथा सुनिया मयना ना चाकिष रया ।	
आपनकार महुकत नाइगे उतरिष गिया ॥	१५८
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वंस हरिर गुया खाइये दन्त करिने सोला ।	
कथा कहिते ज्वले दन्त गुझरे भमरा ॥	२५७
नारी हवु चाकन भिकन पुरस कोट्या छोड़ा ।	
दस गिरस्त वलिबे अथीत नारी चोरा ॥	२५८
नारी चोरा अथीत बैले गिरस्त ना दिवे ठाँइ ।	
तोद आमार बडुयार बेटि कहिवार सज्जात नाइ ॥	२५९
रानी वने सुन राजा विजातेर नागर ।	
एक निवेदन करि तोमार बराबर ॥	२६०
तोमार नाकान राम खिखिका गजार माभत दिया ।	
तोमार नाकान डोर कपिन बान्धिमु भिंहिया ॥	२६१
दुइ तन बान्धिमु नेते घोरा दिया ।	
कामुर क्युटा दन्त फेलाइमु भाङ्गिया ।	

२५४। ग्रीस = ग्रीस ॥ २५८। गिरस्त = गिरस्त । अथीत = अथीत ॥ २६०।
विजातेर = ولايت ॥ २६१। नाकान = ? नाथ ॥ २६१। तन = तन ॥

आउ टाक माथार केस मुह पेनाओ मुड़िया ॥ २६२

हातत तुम्हा गलात केथा उदासीनी हसु ।

तोमार पाळे २ गिया भिच्चा मागि खासु ॥ २६३

स्यामेर वासिरे मन मजासुरे रया रया नयान भोरे ॥ धुया ॥ २६४

राजा बळे जय विधि ठेकितु मया जाले ।

कि आमार प्रेमटा हहलो स्त्रीलोककर सङ्गे ॥ २६५

मोर सङ्गे यावु ना अथीतर सङ्गे यावे ।

सेटे आळे वनर वाघ देखिया डडावे ॥

सेटे आळे वनर वाघ दुर्जन वाघर भय ॥ २६६

स्त्री आर पुढे यदि पथ बहया याय ।

हेन दुःखे वोनर वाघे स्त्रीक धरिया खाय ॥ २६७

खावे आर ना खावे वाघे पेनाहवे मारिया ।

केने आर मरिवि तुह अथीतर लगे याया ॥ २६८

खल खल करिया कन्या हासिबार लागिल ।

के कय ए गुणा कथा के आर पढताय ॥ २६९

पुढसर सङ्गे गेले कि स्त्रीक वाघे घरे खाय ।

ओ गुणा कथा भुट सुट पाणावार उपाय ॥ २७०

खायना केने वोनर वाघे ताक नाह डर ।

मित कलङ्गे मरन हउक स्यामिर पदतल ॥ २७१

तुमि हवु वट दछ आमि तोमार लता ।

राङ्गा चरन वेड़िया लसु पाणाहया यावु कोथा ॥ २७२

यखन आह्निनु आमि मा वापर घरे ।

तखन केने धर्मि राजा ना गेलेन सज्जासि हहये ॥ २७३

यखन हहनु रपर नारी तोरे योग्यमान ।

मोके काड़िया हवु सज्जास मुह तेजिम परान ॥ २७४

तोमारो आगे काल यौवन मोर पङ्क गड़िया ।

पाकिले माथार पुल यावेन सज्जास हहया ॥ २७५

ए रङ्ग मालतीर घरे लहया पड़े डाल ।

नारी हहये रङ्ग रप राखिसु कत काल ॥ २७६

कत काल राखिसु यौवन बान्दिया बान्दिया ।
निरवधि भोजे प्राण स्यामी वलिया ॥ २७७

आमाक विवाह करिया याबो वल चलिया कान्दो तामार लागि ।
तोमार आछे वाप भाइ मोर अभागिनीर केउ नाइ ।
आमि छेड़े एजेम तोर राजार कारने ॥ धुया ॥ २७८

अदुना पदुना वाछिया विवाह करिण ।
भाट प्राप्पन दिया अदुना नाम घुइल ॥ २७९
अदुना नाम घुइल दासी दिख सङ्गे ।

रमन पिरिति घर भाङ्गिसु केमने ॥ २८०
कोन दरजाय भिक्षा जये कोन दरजाय यासु ।
वानिया जाति छेनि कुल हेलाते हारामु ॥ २८१
आमार नावालक सुन्दर कन्या येखानत देखिसु ।
भुरिया भुरिया सेइ खानत मरिसु ॥ २८२
तोमार नाकान सुन्दर कन्या येखानत देखिसु ।
आगे मा दाखो दिया पञ्चात भिक्षा जसु ॥ २८३

हाय हाय स्यामि धन काङ्गिण काल राखो ।
चेङ्गड़ा काखे विवाह कैरे युवाय काङ्गिया याबो ॥ २८४
इबो काल थाक हूदे जैया हात ।
यावत् घुरिया आसि बत्सर पञ्चास ॥ २८५
माथा तुलिया देख राजा डाव नारिकल ।
हृदय उपरत सोभा करे गुया नारिकल ॥ २८६
हाते छिड़िसु मुखत दिसु गाय नाइ तोर वल ।
आछिण वल ये पुबस ना खाय चौह गोबदा रसातले वाय ॥ २८७

राजा वने सुन कन्या हरि चन्द्रर बेटी ।
कथा भाङ्गि कथा वलिजे ओ कथार मान याय ॥ २८८
आगे चड़े हस्तिर माऊत पिछे चड़े राजार ।
हाटिया देखिनु वड़ बाङ्गना पये अनेक दुर ॥ २८९

खेये वुम्भिनु नारिकलर फल पेठ नाइ भरे ।
मिछे घाकि गिरिर वेटा भेरन खाडिया मरे ॥

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रानी वले सुन राजा रसिक नागर ।
एक खानि निवेदन करि तोमार बरावर ॥
याइस ना धर्मि राजा परदेसक नागिया ।
एकटि छेले दिया याचो कोलाक नागिया ॥
नालिमु पालिमु छेले कोलात करिया ।
पुत्र धनक देखिया तोमाक पासरिमु ॥
तोमार माथार छत्र दख पुत्र माथामु दिया ।
नया राजार मा वलिया राज्य खाइम वसिया ॥
छेलेर कथा वलिने रानी छेलेर कथा सुनिया ।

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चिनि चाम्पा कला नय जलत माखि खामु ।
गाछर फल नय छिड़िया हस्त दिमु ॥
तोमार कपालत छेले नाइ चामि कि करिमु ॥
पूर्वकाशी गुरर चान हृदये जपिया ।
सात मासि छेले हइ काया वदनाइया ॥
कोलात वसाइया कन्या चामाक वलिस पुत ।
मेलाचो रानी हृदयर वसन राजा खाउक दुद ॥

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चामि वलिनु छेलेर कथा तुमि चाहलेन दुद ।
विवाहिता स्यामि हचो केसने वलि पुत ॥
तोमार गरवत छिल राजा भेड़ा लगाल ।
काड़ि कड़ार बुद्धि नाइ सरोर भितर ॥
आम राड़ी देखिया वधुक राड़ी करे ।
वाड़ीर आगे भातारटि गेले चक्षु पाकेया मरे ॥

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हां हां वडुयार वेटि माक दिल गाली ।
रनु हय दिन चारिक सन्यास हसु काली ॥
कन्यार पेंटा सहवार ना पारिया ।
दरवार लागिया गेल राजा दुलाकिया ॥

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२८०। मिछे = मिथ्ये कर्चात् वृथा ॥ २८१। पासरिमु = ? स्पर्श करिषु ॥

२८८। काया = काय ॥ २८९। दुद = दुग्ध ॥

बार गच्छि गुया तेर गच्छि तान ।
 तार तले वसिल राजार छाबोयाल ॥ ३०५
 प्राप्पन सप्पन वसिल सारि सारि ।
 सुप्पुकर हिसाव देय विर सिं भाबहारि ॥ ३०६
 खोनार खाटे थाकि मयना बपार खाटे पाबो ।
 सुप्पुकर दरवारत गेल मयना मति माबो ॥ ३०७
 भर काचारि करे ठाव्वा ठौल ।
 हेन पति खाड़ा हइल मयना सुन्दर ॥ ३०८
 जननीक देखिया राजा करे परनाम ।
 गलात वस्त्र बाधिया करे परनाम ॥ ३०९

जीबो जीबो राड़ी बेटा धर्मे देउक वर ।
 यत गुटि सागरर वावा एत आरिखल ॥ ३१०
 सुइ बुभ राड़ीर बेटा गेछे सत्थास हयया ।
 आइज पति आके सुन्दर वधु पायया ॥ ३११
 सत्य गेल दोया पइल तिरतिया हइले ।
 कलि युग पड़े बेटा विवाह सकाले ॥ ३१२
 कलि काल मन्द काल पइल आसिया ।
 परार धन परे खाय एकेला वसिया ॥ ३१३
 राजा हइये ना करे राख्यर विचार ।
 पुत्र हइये ना करे पितार उद्धार ॥ ३१४
 स्त्री हइये ना करे स्यामीर भक्ति ।
 सीस हइये ना करे गुबर आरति ॥ ३१५
 चारिटा भाबइ तार गेल अधगति ॥ ३१६
 गुब ना भजिले भाबइ कगाले ना खाय ।
 अराविष्णु देहा हइले कागा काड़ि याय ॥ ३१७
 आगुने पड़िले भाबइ हय काड़ खार ।
 जनत भाखेया दिले मत्सर आहार ॥ ३१८
 मृत्तिकाय गाड़िले भाबइ पोकार आहार ।
 कोन दिया ना देखों तोर भाबइर निहार ॥ ३१९

३०६। सुप्पुकर = ملک ॥ ३०७। दरवारत = دربارت ॥ ३०८। ३११। पति = प्रति ॥ ३१२। दोया = द्वितीय ॥ ३१३। कागा = काक cf. the Braj Bhāṣā काव ॥

वाक्का निल कमलेरे कोमन कैरे ।
अथीतेर सङ्ग याब्बो । लोको वजिबे ।
इनि हेलेर वुभि माब्बो नाइरे ॥ धुया ॥ ३२०

सङ्ग्यास करिते राजा कैरे गेल-मग ।
चौपथर माभत कन्या जुड़िल कान्दन ॥ ३२१
कोमन कैरे येते चाब्बो परदेस जागिया ।
कोमन छान आके मयनार नेब्बो परखिया ॥ ३२२
तैल परिच्छा देखी मयनार वरावर ॥
रे परिच्छाय याय यदि उत्तरिया ।
मल्लक मुड़िया तवे याब्बो सङ्ग्यास हइया ॥ ३२३
इइ कथा सुनिया राजा ना थाकिल रैया ।
दरवार जागिया राजा गेल चलिया ॥ ३२४
दरवारे बसिया राजा बेचरित मन ।
दयार भाइ गोलाम खेतुक डाके घने घन ॥ ३२५

तोरे वलो गोलाम खेतुक वाक्क मोर धर ।
मायुर मङ्गलक जागिया याब्बो वल चलिया ॥ ३२६
इइ कथा सुनिया ना थाकिल रैया ॥ ३२७
इइ कथा वल गिया मयनार वरावर ।
तैल परिच्छा दिवार चाय तोमार वरावर ॥ ३२८
इइ कथा सुनिया मयना हासिते जागिल ।
तोमार वुडि नय वधु सकलर चक्र ।
यत वुडि सिखिया देय निरासी सकल ॥ ३२९
एक परिच्चार बदल सात परिच्छा दिसु ।
तवु तोर राजार वेठा वाड़ी घर छाड़ामु ॥ ३३०

तोक्क वलो भाइया खेतु वाक्क मोर धर ॥ ३३१
आताइला पाताइला चौका नेब्बो वल आरोपिया ।
तिनटा नारिकोलर फल तेहिरा खिचिया ॥ ३३२

साइठ भोग कड़ाह दिख चौकाय चड़ाइया ।	
आसी भोग तैल दिख कड़ाहत चड़ाइया ॥	३३३
साण काळे आगुन दिख सुखकाइया ।	
उपरर क्वावनी मारिण तुनिया ॥	३३७
सात दिन पर्यन्त जाण देय निदम करिया ॥	३३५
एक दिन दुइ दिन पच्च दिन हइल ।	
सात दिन अन्तरत क्वावनी उठाइल ॥	३३६
तैल गरम हइयाळे आगुनर समान ।	
एइ कथा जानाइल खेतु राजार वरावर ॥	३३७
तैल परिच्छा हइल गोणाम वरावर ॥	३३८
कि आआ वलेन तुमि राज राजेखर ।	
एइ कथा वल गिया मायर वरावर ॥	३३९
तैल परिच्छा तैयार हइल राजार वरावर ।	
राजा तजव करे मा सीत्र करे चल ॥	३४०

तेर वापर खाँचोँ ना तेर राजार वापर खाँचोँ ।	
तेमार ऊजुमत कि परिच्छा दिवार याँचोँ ॥	३४१

एइ कथा जानाइल राजार वरावर ॥	३४२
एइ कथा सुनिया राजा क्रोद्धमान हइल ।	
घरर सेंचोयाली गामका राजा खेतुक फेलाइया दिख ॥	३४३
ये गामका दिया वान्मिल भिड़िया ।	
मयना मतिक दिख तैलत फेलाइया ॥	३४४
येन मते मयना मति तैले पड़िल ।	
धां धां करिया अणल सर्गत देखा दिख ॥	३४५
तैलत पड़िया मयना डुविल गला हइते ।	
आझले आझले तैल मुकठिया वसाय माथे ॥	३४६
सम्भाट देखिया राजा क्रोद्धमान हइल ।	
गोणाम गोणाम बलिये खेतुक र गाली पाड़िल ॥	३४७
उपरर क्वावनी मायर लचो तुनिया ।	
नचो दिन भरिया जाण देखो निदम करिया ॥	३४८

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४०४ । विसासर = विसेसर । ४०५ । तासीम खाना = تعلیم خانہ ॥ ४०६ ।
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४६७। सुझाकारत = सुन्याकारे ॥ ४७१। उवजील = उपजिल यथोत् जल रहल ॥
 ४७२। निन = निद्रा ॥ ४७४। पेनु = पाइलाम ॥

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४८० । सुन्नत = सून्ने ॥ ४८१ । मोस्या = غصه ॥ ४८३ । कमवन्ताक =
 مسجده کتبخانه کو ॥ ५०१ । नाकि = न्याय ॥

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इति ॥

I am sorry to say that the above text was copied out by an energetic *bābu* who had the greatest contempt for the dialect it illustrates. He showed his contempt by carefully *correcting* the text, wherever it differed much from his idea of the *sādhā bhāshā*. I did not discover this until the first two hundred and fifty verses had been printed off; so, thus far, the above must be taken *cum grano salis*. The principal improvements will be noted in the terminations of the genitive and locative. I may point out here, that Rangpurī possesses an instrumental ending in *ए*, which may easily be confused with the Bangālī locative. Thus *हाने* in Rangpurī means "with a hand", while in Bangālī it means "in a hand," of which the Rangpurī would be वातत.

Translation of the Song of Ma'nik Chandra.

1. Think on the name of Ráma, meditate on him with a single mind. If thou utterest the name of Ráma what can Yama do. 2. The wicked man did not utter the name of Ráma in the sloth of his tongue: and even though it was a receptacle of ambrosia, his body was devoured by poison. 3. Who walketh uttering the name of Ráma, along with him goeth a servant of Ráma armed with bow and arrow. 4. The ship that is called by the name of Ráma, hath for its pilot the Holy Master himself. Opening out his arms he crieth out "Come, I will ferry thee across." 5. I have placed the worship of Ráma upon my head. I pause awhile from considering his virtues, and sing the virtues of one who hath accomplished (his path of holiness). By praising him I obtain the accomplishment of my desires.

6. Mánik Chandra was a very pious king in Banga. Each month he used to collect a tax on each plough of seven and a half *gaṇḍas** of *káoris*. 7. The people paid a tax of seven and a half *gaṇḍas* of *káoris*, and on the day of the *Ashṭamí pújá* used to bring him a herd of goats. 8. The fuel-seller, who supplied him with fuel, had six months' taxes remitted to him in consideration thereof. 9. The leaf-seller, who supplied him with bundles of leaves, had six months' taxes remitted to him in that consideration. 10. Such a king was Mánik Chandra that his *ra'iyats*' fences were built simply of thin reeds; the man who lived at hap-hazard, even he had a horse at his door. So proud were they, that not even the maid-servants wore *sáris* made of jute. 11. No one had need to use the foot-path of another, and no one had to drink the water of another's tank.†

12. From the south there came a *Bangálá* with a long beard; and that *Bangálá*, when he came, made money from the country. 13. Where the tax had formerly been $7\frac{1}{2}$ *gaṇḍas* he took 15 *gaṇḍas*. 14. They sold their ploughs, they sold their yokes, and some sold their ploughshares; through the distress caused by the taxation, some even sold their children at the breast. 15. The misery of the poor unhappy widows became very lamentable; all through the country the villages became broken up. 16. The little *ra'iyats* said to the big *ra'iyats* "Brothers, let us all go to the *pradháns*."‡ 17. Saying, "What advice will all the *pradháns* give," all the *ra'iyats* after consulting together, went to the house of the *pradháns*. 18. "What advice shall we adopt, brothers, and what course of conduct? The king within the kingdom hath become unjust." 19. The *Pradháns* said to all the *ra'iyats*, "This advice I have no power to give; come to S'iva. Let us see what command the mighty Bholánátha will give us." 20. All

* A *budí* is five *gaṇḍas* or twenty.

† i. e., every one had his own private path to the *háṭ*, and his own private tank.

‡ The *Rangpurí* term for the village head-man.

the *ra'iyats* after consulting together, went to S'iva's (temple). 21. Calling him "S'iva Thákur," they cried with a loud voice. S'iva Thákur was in the temple, and put his foot outside the door.* 22. When they saw S'iva, all the *ra'iyats* made obeisance. Tying their clothes round their necks, did they make obeisance.

S'IVA SPAKE.

23. "Long may ye live, long may ye live, O *ra'iyats*, may Dharma bless you. May the days of your life be as many as the sands of the sea. 24. Why, why O *ra'iyats*, have ye all come?"

THE RA'ITYATS SPAKE.

25. "What advice shall we adopt, and what course of conduct. The king within the kingdom hath become unjust." 26. The ancient S'iva meditated, and after meditating looked up, and found in the fate of the king that the limit of his life was six months distant.

S'IVA SPAKE.

27. "If ye tell this word unto Mayaná she will assuredly destroy my kingdom of Kailása."

THE RA'ITYATS SPAKE.

28. "One oath, two oaths, three oaths in the name of Hari. If we speak thy word, may we die in great sin." 29. All the *ra'iyats*, after consulting together, went to S'rikalá hát. 30. They filled an earthen pot with incense and vermillion. They filled a coop with geese and doves. 31. They also took a white goat, tying him with a rope. Fasting on a Sunday, they took them to a *tirtha* on the Gangá.† 32. They tied the goat at a place sacred to Dharma on the banks of the Gangá, and sacrificed it there.‡ 33. They offered several geese at the *ghát*, and burnt incense and vermillion there. 34. They rooted up unblown *binná* grass and brought it. And then wringing out his *languñi*, he (S'iva) gave vent to the curse; and that curse they (the *ra'iyats*) took up in the corner of their garments.

35. On the Sunday S'iva gave the people this curse. On the Monday the fever seized the king. 36. On the Tuesday the king became weak; on

* It is worth noting how entirely the ideas of the author of the poem are circumscribed by the incidents of his village life. Every one, God or man, acts and lives as if he were a simple *Rangpurí* villager. This verse is an instance. When one *ra'iyat* goes out to see another, it is the village etiquette, to bawl out to him, "*He!* so-and-so," while the visitor is yet a hundred yards or so from the house of him on whom he is about to call. If the latter is "at home," he goes outside his door, and greets the comer. This latter action is called "putting one's foot outside the door." Compare the English expression of "calling on a person."

† By the Gangá, is meant the Brahmaputra. See note to v. 159.

‡ Lit. Dug a hole for the sacrificial post in the same.

the Wednesday he ceased to eat or drink. 37. On the Thursday the king gave up the ghost*: and on the following Tuesday, Chitra Govinda, the accountant of Yama, opened out his account papers. 38. He found in the account papers, that Mánik Chandra had six months to live; and turning his head, he began to speak to Saman Rájá Yama.

YAMA SPAKE.

39. "A king within his kingdom hath become unjust. Bring hither that king within the house of Yama." 40. He began to call for Abál Yama. He sent a letter (for the king) by Godá Yama.

YAMA SPAKE.

41. "I tell thee Godá Yama, and take thou heed unto my words. Bring Mánik Chandra Rájá here, with his hands and neck tied." 42. He took his leathern rope and his iron hammer, and tied them in a knot; and then Godá Yama started on his journey. 43. Many miles he went, many roads he met. He went a great distance and reached the house of Mánik Chandra. 44. During the six months' illness within the palace, the fair Mayaná did not enquire about the true state of affairs.

THE KING SPAKE.

45. "O Nengá my servant, I tell thee, carry my message: go to Mayaná and tell her about this. 46. Say, 'For six months the king hath been ill within his palace. The King of Kings wisheth to see thee.'" 47. Nengá heard these words and did not tarry. He went off to the palace of Mayaná. 48. Inside the door the Lady Mayaná was playing dice, and through the lattice of the door Nengá made obeisance to her.

MAYANÁ SPAKE.

49. "Why, why, O Nengá hast thou come?"

NENGÁ SPAKE.

50. "Hear, O lady, hear the news; for six months the king hath been ill within his palace. The King of Kings wisheth to see thee." 51. The lady Mayaná became absorbed in contemplation, and, in her contemplation, her eyes fell upon Yama. 52. She took a *bangálá* betel-nut and sweet *míṭha bhari pán* leaf, and divided the nut into two pieces with a knife. 53. In the *pán* leaves she put a little lime, and folded together the *heṭ khili* and the *upar khili*.† 54. She put sixteen scores of charms on the top of

* Or perhaps "lost his power of sensation."

† The little conical shaped parcels of prepared *pán*, which we see in the *ḍszárs*, enclosing a piece of betel-nut and some lime, are called *khilis*. The outside wrapping is made up of two leaves, of which the lower one is called the *heṭ khili*, and the upper one, the *upar khili*.

it; and put the plate of *pás* on the head of the maid-servant. 55. The Lady Mayaná went out, seeing that it was a lucky time, and arrived at the palace of the king.

MAYANÁ SPAKE.

56. "Why and wherefore did the great king summon me?"

THE KING SPAKE.

57. "The king hath been ill for six months in his palace, and the fair Mayaná did not enquire about him."

MAYANÁ SPAKE.

58. "Hear, O king of kings. Learn the magical arts which I have acquired, and then the river of my life will dry up upon thy shoulder.*

59. In my life time great trees will live and die, and we two shall live together in everlasting youth."

THE KING SPAKE.

60. "Hear, O Mayaná: let Yama carry off me, Mánik Chandra; but nevertheless let not the knowledge of a woman be heard by me."† 61. The king, although offered the arts of women, neglected them; and at exactly midday Cuckold‡ Yama started. 62. He brought the thirsts of death and struck him with them. The king arose crying "Water, water. 63. Give me, O give me water, O fair Mayaná. Give me one vessel of water, and save my life."

MAYANÁ SPAKE.

64. "There are a hundred queens in thy palace. Drink water at their hands, O king of kings."

THE KING SPAKE.

65. "Water, at the hands of even a hundred queens, would smell of fish. It is when I drink at thy hand, that I find great solace."

MAYANÁ SPAKE.

66. "If I go now to bring thee water, that cuckold Yama will bind thee and carry thee away."

* *i. e.* thou wilt live as long as I.

† Lit. my womb.

‡ The word *Bhádnyá* is an abusive term, and means, more correctly, a man who makes money by the sale of his wife's person.

THE KING SPAKE.

67. "List O Mayaná. Take heed to my words. Place the knife for sacrificing goats upon my bed. 68. When that cuckold Yama cometh, like a Daitya, or a Dánava, him will I strike and slay with the sacrificial knife." 69. As soon as the Lady Mayaná took the vessel in her hands, many men were heard to sneeze,* and many death-watches sounded. 70. Just as the Lady Mayaná passed outside the house, seven men from the seven quarters came in with a noise like thunder. 71. They tied him with leathern thongs, and with an iron mallet they began to beat him.

THE KING SPAKE.

72. "Who beateth me so often? The Lady Mayaná hath gone to fetch me water. Let me fill my belly with one vessel of water."

THE YAMA SPAKE.

73. "Thy wife hath got a boon from Gorakh Náth. If Mayaná meet us, little good will it bode us. She will kneel upon us, and beat us this very midday." 74. Being unable to bear the beating of Yama, the king gave up the ghost, uttering the name of Mayaná. 75. That ghost took Godá Yama and tied it up in his *languṭi*, and to the seven quarters went off the seven men.

76. But Mayaná went to the banks of the Gangá† and spake "Hear, O Gangá, I make known unto thee my petition. 77. There is a king whose worship thou hast enjoyed for these twelve years; give one vessel of water and save his life. 78. For one vessel of water thou shalt have forty-two vessels; therefore do thou restore to life a pious king."

GANGÁ SPAKE.

79. "For whom thou art taking thy vessel full of water; that pious king hath himself been taken away." 80. On hearing this Mayaná began to weep, and hurled away her vessel worth a *lakk* of rupees. 81. Mayaná dived fourteen fathoms beneath the water, and sat in contemplation, and saw that the vermilion on her forehead had become discoloured. 82. She saw that her shell bracelets had turned black, and she broke on her head the two bracelets worth a *lakk* of rupees.

THE BURDEN OF HER SONG.

83. "I have lost my Lord. How many days must I wait and watch for him."

84. Mayaná walked to the palace. When the Lady Mayaná entered the temple, she lit both the front and the rear lamps. 85. Mayaná walked

* Sneezing is a sound of ill omen.

† See note to v. 169.

to Yama's abode; the Lady Mayaná arrived on the banks of the dread river. 86. When Mayaná saw the river she became fearful. It is a river six months wide. The ferry-boat finishes its voyage in a year. Each wave seems vast as mountain peak.

THE BURDEN OF HER SONG.

87. "My fate hath become a lot of misery, as Kṛishṇa was of Bindá. The boat is broken and the ropes are worn; how can I pass over, O my guru. That is, if my guru is by me to help me. 88. I will hold the rudder of virtue. O my guru, the boat is broken, and the ropes are worn, but I will cross over."

89. Half her scarf she spread upon the water, and thinking upon virtue, she took her magic seat. 90. Mayaná uttered the words "*tuḍu, tuḍu,*" and the journey of six months was accomplished in six quarters of an hour. 91. She walked to Yama's palace, where thirty-six *krors* of Yamas were sitting in the hall of audience. 92. As soon as the Lady Mayaná stood in Yama's abode, on this side and on that side the Yamas began to run away. 93. When Mayaná came to Yama's palace, she spread great alarm; some got colic and some got pains in their heads. 94. She became a Muhammadan doctor and a Hindu doctor, and extracted the poison from their bodies; but when she came to give them medicine every one ran away. 95. As soon as Godá Yama cast eyes on Mayaná, he ran away as fast as his legs would carry him to his own palace. 96. He went to his own palace and hid himself in a room, and from where she, the Lady Mayaná, was, she lost sight of him. 97. The Lady Mayaná went into contemplation and gazed about, and in her contemplation she saw him in his room. 98. Mayaná collected herself together, and laid aside her own proper form. She put on the appearance of a gardener's wife, and went into the palace of Godá Yama. 99. "Godá, Godá", Mayaná cried to him with a loud voice. 100. As soon as Godá Yama saw Mayaná he burst through the *ṭáṭṭí* walls of his palace and ran away*. 101. Mayaná cried "*már már*" and chased him through a treeless field, where a hundred ploughmen were ploughing. Like a deer did Mayaná chase Yama. 102. Thence Godá Yama lost his senses and turned himself into a prawn, and jumped into the sea. 103. The Lady Mayaná went into contemplation and gazed about, and in her contemplation her eyes fell on the prawn. 104. Mayaná uttered "*туру туру*" with a terrible cry, and changed herself into forty-two buffalos, who jumped into the sea. 105. Eating cress she chased Yama. In mid-sea she caught Yama by the neck. 106.

* Compare note on v. 21. All the houses of the peasantry in Rangpur are built of *ṭáṭṭí* (mat) walls. When a thief is caught in such a house, he attempts, usually successfully, to escape by bursting through these flimsy obstructions.

There Godá Yama, mighty as the thunder-bolt, burst the staff she held in her right hand and fled. 107. Thence Godá Yama lost his senses and he became a minnow and began to swim in the water. 108. Leaving her former shape, Mayaná concentrated herself and became a *Pánkáuri* and *Ványár*,* by a change of her form. 109. With flappings of her wings she chased him, and in mid-sea she snapped up Godá Yama in her bill. 110. Then Godá Yama, mighty as the thunder-bolt, thrust Mayaná off, and ran away. 111. Thereafter what did Godá Yama do? He became an eel, and hid himself in the mud. 112. Thence the Lady Mayaná went into contemplation, and her eyes fell upon him in the mud. 113. Mayaná uttered "*tuḍu, tuḍu*" with a terrible cry, she became a swan; pecking at the mud she chased Godá Yama, and in mid-sea she seized Godá Yama by the neck. 114. He thrust off the Lady Mayaná and fled away. He cast aside his former form, and Godá Yama concentrated himself. 115. He took the form of a maggot and went off to Pátála. 116. When he arrived at Pátála, Yama twisted his beard (boastfully). "Now, how will the *śyáli*, the Lady Mayaná, recognize me." 117. The Lady Mayaná went into contemplation and gazed about, and in her contemplation her eyes fell on the maggot. 118. Leaving her former shape Mayaná concentrated herself, and became an ant by a change of her form. 119. She went to the world of Pátála, and, seizing Godá Yama by the throat, gradually pulled him up out of the ground. 120. Leaving her former shape Mayaná concentrated herself, and became her ownself by a change of form. 121. She threw him down on his face, and began to belabour Godá Yama. She continued belabouring him till her hands were weary. She then turned him on his back, and began to kick him. 122. Then Godá Yama, mighty as the thunder-bolt, became a house pigeon and flew off to the sky. 123. Mayaná changed her shape, and became a falcon and a hawk, and she pecked at him and cast Godá Yama down from heaven. 124. Thence Godá Yama lost his senses, and became a mouse changing his form. 125. He went to Kaṭhiyá the oilman's house, and hid himself under his *máchá*.† 126. The Lady Mayaná went into contemplation and gazed about, and in her contemplation her eyes fell upon the mouse. 127. Leaving her former shape Mayaná concentrated herself, and became a cat by a change of form. 128. She changed herself from being one cat into forty-two cats, and surrounded the house of Kaṭhiyá the oilman. 129. One *daṇḍa*, two *daṇḍas*, three *daṇḍas* passed, and the ill-natured woman caught good-natured Godá Yamá. 130. She made him descend from the *máchá*, and with a sudden leap the Lady Mayaná seized him by the neck. 131. Thence Godá Yama, mighty as the thunder-bolt, slipped out between the interstices of her claws and fled.

* Two kinds of fish-eating birds.

† A bamboo bench.

132. Yama left his former shape, and concentrated himself. He became a *Vaishṇava* and changed his form. 133. He used the earth castings of crabs instead of sandal-wood paste, and made his rosary of *Sáil* seeds. 134. Hopefully he took a branch of a castor-oil tree (for his stick), and going into a *Vaishṇava* *pújá* house, sat himself amongst the worshippers. 135. The Lady Mayaná went into contemplation and gazed about, and in her contemplation her eyes fell upon the *Vaishṇava*. 136. Mayaná gave up her former shape. She concentrated herself, and took that of a bee. 137. In the place of one bee she became forty-two bees, and set out for the place of worship, and she flew around the heads of all the *Vaishṇavas* there. 138. All the *Vaishṇavas* said, "Brothers, hear the news. What sinful *Vaishṇava* is in this assembly?" 139. As soon as Godá Yama saw the bees, he slipped under the quilts of the *Vaishṇavas*. 140. As soon as the Lady Mayaná found out where he was, she settled down upon Yama's neck. 141. Not being able to bear the stings of the bees, Godá Yama ran away from the place. 142. Mayaná laid aside her bee-shape, and, after concentrating herself, took her own form. 143. She seized Godá Yama, and plucked up from the ground an armful of *clayá* grass. 144. Fifty-two times sixteen scores of ropes she twisted, sitting at a place where three roads meet,* and tied her own waist to that of Godá Yama. Then she carried off Godá Yama beating him with a rod of cane.

MAYANÁ SPEAKS.

145. "Hear, O Godá Yama, while I make my petition. Set free my husband, who is my only wealth."

GODÁ YAMA SPEAKS.

146. "Thy husband I will not set free", and thereupon Mayaná began to weep.

THE BURDEN OF HER SONG.

147. "My husband is no longer in my house, O lord of the unhappy. For whom shall I abide in the days of my youth?"

148. Mayaná uttered "*tuḍa, tuḍa*" with a terrible cry, and all the Heavenly Munis came down on hearing her voice. 149. In a chariot of flowers, came Gorakh the Vidyádhara. Riding upon a flail, came Nárada

* The fact that a place, where three roads meet, is considered especially favourable for performing magical rites, is worth noticing. I need hardly draw attention to similar customs obtaining in Europe. In Tirhut,—it is customary, when a person is sick, to cast away at midnight at a place where three roads meet, an offering of some yellow cloth, a fowl, and some condiments, over which some charms have been recited. It is believed that the disease will then leave the sick man, and seize upon the wayfarer who first comes across the offering in the morning.

the best of munis. 150. On the back of Vásoyá came Bholá, the lord of the world. Riding on a bow and arrow came Ráma Chandra and Lakshmana. 151. The five Páṇḍava brothers came down here and there; there is no counting the number of munis who came from heaven. 152. Mayaná parted her hair in two, and fell at the feet of Gorakh Náth.

MAYANÁ SPAKE.

153. "Help, help, O Gorakh the Vidyádharma. He hath carried off my husband, who is all my wealth. He will not give back my husband, who is my wealth."

GORAKH NA'TH SPAKE.

154. "Hear my words. All the munis have taken advice, and have blessed thee, Lady Mayaná. 155. Go, O Mayaná, we give to thee a boon. Let there be a fœtus developed for seven months now within thy womb." 156. Even as the munis blessed her, her body which was as light as *solá* (pith) gradually became heavy.

THE MUNIS SPAKE.

157. "In eighteen months, it will be born, in its nineteenth year it will die. But, if it worship a Hádi's feet with steadfast mind, it will not die." 158. On hearing this Mayaná delayed there no longer. She started for her palace and arrived there in safety. 159. She took nine *káorís* in her hand, and departed to the banks of the Gangá.* 160. With the nine *káorís* she bought a piece of land, and then returned to her own palace. 161. She broke up the old house and made a bier, and with it went some firewood on litters on men's shoulders. 162. Oil, *ghí*, mustard, and sesamum began to go. She called all her relations, and she cut some fresh bamboos and made a bier. 163. She took the pious king away upon the bier she had prepared, and the Lady Mayaná herself was carried off upon the door of the house. 164. Mayaná began to sing the Song of the Excellence of Hari. She began to praise him as she was carried to the river's bank. 165. She built a funeral pyre running north and south, she buried posts and made a platform. 166. By the side of each post she set a jar of *ghí*. Beneath each of them she set a jar of oil. Mustard seed and sesamum she scattered over the pyre. 167. Mayaná uttered the words "Guru, Guru" with a terrible cry, and Gorakh Náth came there and stood visible.

MAYANÁ SPAKE.

168. "Protect me, O protect me, O Gorakh the Vidyádharma."

* It must be noted, that throughout this poem, the word Gangá does not refer to the river commonly known as the Ganges. It always refers to the Brahmaputra.

GORAKH NÁTH SPAKE.

"Go forth Mayaná, I have given thee a boon. Within the fire thou shalt perceive the cold of Mágha. 169. Mayaná began to spread vermillion all over her forehead. 170. She put on a silken scarf. She took a golden knife and a mango branch in her hand, and she laid out the king towards the north and south. 171. Mayaná laid the king's head on her right hand, and she put her own head on his left hand. 172. In each household a citizen gave one piece of firewood. The pile of firewood almost touched the sky as well as the earth. 173. Water and sandal-wood did Chandra, the merchant, scatter upon the pyre. Not a single near relation was present to set it alight. 174. One who lived near the door of the king,—a bráhmaṇ *guru*,—stretched forth his hand and applied the torch. 175. Each relation cast one vessel of water on the pyre. Together they lustrated the pyre, once, twice, and five times. Saying "*Hari bol*," they set it alight. 176. E'en as the fire smelt the smell of the *ghí*, it blazed up with a great roar. 177. For seven days and nine nights Mayaná stayed within the blaze, and even her apparel though offered to the flames did not take fire. 178. Mayaná burnt the body of the pious king, and placed the ashes in her lap. There sat Mayaná, like a *Gosvámí* in his house. 179. Mayaná burnt the body of the pious king and the smoke rose up to heaven. There sat the Lady Mayaná like unmelted gold. 180. The little relations said to the big relations, "Brothers, thrust at her. Let all the relations thrust at her." 181. The Lady Mayaná is sitting within the fire. She cries: "Hear, O relations, I have a child of seven months in my womb. Let not all the relations thrust at me." 182. The little relations said to the big relations, "Brothers, let us go to Chánd the merchant, and ask his advice. 183. Ye know Chánd the merchant from childhood. Let us see what answer he will give." 184. Behind the door sat the merchant playing dice; and through the lattice, did they make reverence to him.

CHA'ND SPAKE.

185. "Why, O relations, why and wherefore have ye all come?"

THE RELATIONS SPAKE.

186. "For seven days and nine nights Mayaná hath been in the fire, and yet the Fair Mayaná hath not been burnt."

CHA'ND SPAKE.

187. "This Mayaná hath obtained a boon from Gorakh Náth. Fire doth not burn her, nor doth she sink in water. Were the three worlds to come to an end, she would not go to Yama's abode. And yet, O relations, ye wish to slay her. 188. Sit ye in a place where three roads meet, and

twist of grass fifty-two *krors* of ropes; carry ye off a stone weighing twenty-two *mans*. 189. Thrust her forth from the fire, and tie ye the twenty-two *man* stone upon her chest. 190. Cast ye Mayaná and the ashes of the fire away on the stream, that they may float away. Then bathe ye and return to your homes." 191. On hearing this the relations no longer stayed. They carried away the stone of twenty-two *mans*. 192. They thrust the Lady Mayaná forth from the fire, and tied the stone of twenty-two *mans* on her chest. 193. They cast her and the ashes upon the stream, and bathed and returned to their homes.

194. At the expiration of eighteen months and eighteen days Mayaná became filled, and then the (future) pious king turned himself in her womb. "I die, I die," said Mayaná, and she began to weep. 195. She brought into use her magical art called *kharupá* (the art of cutting), and by it she cut open her fifty-two *krors* of ropes. 196. "I die, I die," said Mayaná, as she landed at the foot of a *Ním* tree; and as she ascended, a sound was heard like unto the roaring of heaven in the intermediate quarters. 197. The Mahárāja fell upon the ground amid the after-birth and birth waters; and he began to cry, saying "*omyá* and *chomyá*." 198. The little relations said to the big relations, "Brothers, let us go and see whose child is crying thus." 199. They took one step, and they took two steps, and they arrived at the spot. Mayaná said unto them. "Hear, O relations and mark my words. 200. Decorate the *pálki* of the old king and bring it here, and take this child-king to the palace." 201. They decorated the *pálki* of the old king and brought it, and they mounted the pious king within it. 202. Big drums, and little drums, guitars, and cymbals sounded in all directions. Cymbals, side drums and kettle-drums sounded in all directions. 203. There was firing of guns and a thick darkness caused by the smoke. Father could not recognize son; he only could call for him. 204. There was a poor man who had a child in the kingdom, and he could not give it food and water in his own house. 205. So he cast it down at a place where three roads meet, amidst its after-birth and birth waters. 206. That child did Mayaná also take up into her bosom, and carry to the palace.

MAYANÁ SPAKE.

207. "I say unto thee, my maid-servant, pay attention to my words." 208. The maid-servant went and called the wet-nurse and brought her. 209. The wet-nurse cut the navel strings of both the children. She took all the presents that Mayaná gave, and went to her own house. 210. What with to-day and what with to-morrow seven days passed, and during the seven days the king caused a concert of flutes and drums to be made. 211. What with to-day and what with to-morrow, ten days passed, and after ten days the king held the first *śráddha* after his father's death. 212.

On the thirteenth day the king held the final *śrāddha*, and held a concert of drums and cymbals, and all the relations came and sacrificed. 213. He gave a feast to all his relations, and at that hour the Lady Mayaná first touched fish. 214. What with to-day, and what with to-morrow, a year passed, and after one year another day came. 215. What with to-day, and what with to-morrow, five years passed, and she gave him to be taught by a *guru*. 216. He taught the king to write in four lessons. What with to-day, and what with to-morrow, seven years passed. 217. The king was then named. Mánik Chandra Rájá's son was called Gopí Chandra. 218. And his younger (foundling) brother was called Lankeśwar "Found in the Field."* 219. What with to-day, and what with to-morrow, nine years passed; and then, what did the Lady Mayaná do? 220. She spake as follows to the *Guru bráhmaṇ*.

MAYANÁ SPAKE.

221. "Go, go, O *guru bráhmaṇ*, pay attention to my words. Go quickly before the king Harís Chandra. 222. He has two daughters in his palace, named Aduná and Paduná. Arrange a marriage between them and my son, and return." 223. The Reverend Bráhmaṇ on hearing these words did not delay. But hastened to the palace of king Harís Chandra. 224. He cried out with a loud voice "Ho! King Harís Chandra."† The king was in his house and he stepped out. 225. The reverend and learned Bráhmaṇ made salutation. 226. The king gave him a god-like throne to sit upon, and after supplying him with camphor and betel, enquired as follows. 227. "Why and wherefore, O *guru bráhmaṇ*, hast thou come so great a distance?"

THE BRA'HMAṆ SPAKE.

228. "Mayaná hath sent me to thy presence. In thy palace are two damsels named Aduná and Paduná. The fair Mayaná wisheth to form a marriage with them. 229. Mayaná hath a son within her palace, and to him doth she wish to give them."

THE KING SPAKE.

230. "Go, go, I consent," and ordered him away. And the Bráhmaṇ on hearing this returned to Mayaná. 231. They took a load of betel nuts and a load of *pán* leaves. And five bráhmaṇs began to cut the betel and the *pán*. 232. They cut the betel and *pán* and searched for a

* He is also called Khetu, or Khetuá, and appears to have become Gopí Chandra's servant. He took over his concubines when the latter went on his pilgrimage. See also note to verse 290.

† Compare note to v. 21.

lucky day, and then did they fix the time of the marriage. 233. On the Saturday, Mayanā fasted, and on the Sunday, she made arrangements for the marriage. 234. They planted five plantain trees in King Haris' Chandra's palace, and they lit the golden lamps and the censers on the day fixed. 235. They then sent for five singing women, and cries of "*u/u*, *u/u*" were heard around. 236. He gave Adunā in marriage, he gave Padunā, and he gave a hundred maid-servants to wait upon them. 237. He gave as wedding-presents a hundred villages, and a hundred elephants. 238. He gave as wedding presents a hundred horses and a hundred cows. 239. After giving them in marriage he allowed them to depart. And immediately afterwards the Lady Mayanā sent an invitation to all the kings of all the kingdoms. 240. From that time that pious king was called Gopī Chandra.

241. After eighteen years, at the advice of his aged mother he became a *Sanyāsī*. 242. A hundred beautiful damsels, weeping, fell at his feet, "O pious king, do not depart and leave us."

THE QUEEN SPAKE.

243. "Nay, nay, thou shalt not go, my King, to a far country. For whom but thee, have I built up this cold dreary house (of my life). 244. I built a humble* dwelling, nor yet is it sullied by old age. Why art thou leaving me in my youth, and turning my bridehood into vanity? 245. In my dreams shall I see my king. I shall throw my arm on the couch; but the wealth of my life will not be there. 246. Behold, every† mother and sister of a man of modest wealth shall have her master to sleep upon her bosom, while I, unhappy one, will remain weeping in an empty house. 247. When a house is empty and the doors are closed, men come and kick the walls outside. In the time of her youth all voices cast scandal at a widow. 248. Therefore shalt thou take me with thee. I am the life, the wealth of thy life; let thy damsel go with thee. 249. In the time of thy hunger I will cook thy food. When thou art thirsty I will give thee to drink. 250. In mirth and laughter will I pass the night. 251. If we have a long field to traverse, I will wile away the time in talk. When we approach the dwelling of a householder, there will I reverence thee like my *guru*. 252. A cool mat‡ will I spread for thee; on a pillow shalt thou rest thy feet. Laughing and joking will I shampoo thy body. 253. When I hurt thy hand I will shampoo thy feet, and amidst our sport and laughter, I will devour thy bosom, and thou shalt devour

* Lit. pent-roofed.

† Lit. ten. This use of "ten" for "every," is of frequent occurrence in Bangpur. Thus *Das'jan ki kay?* is the stock expression equivalent to "What do people say?"

‡ Vulgo. *Sattul-pat*.

mine. 254. In the hot season will I fan thy countenance with a palm leaf. In the cold month of Mággha I will nestle into thy body for warmth, 255. In the cold month of Mággha I will cook for thee spiced viands.* Indra's favourite sweetmeat, the lap of a hundred wives, will I alone cause thee to enjoy."

THE KING SPAKE.

256. "List, O daughter of king Hariś Chandra. In many varied ways art thou displaying thy charms, nor can I bear them. 257. Thy teeth are white as the *solá* pith, from eating the *Vansa Hari* nut. When thou speakest, they glisten (like white flowers), and the bees come humming towards them. 258. If thou goest with me, thou wilt be a woman of fresh and fair appearance, and I will be a man clad in one rough blanket. When they see us, all the people will say—'There goeth a pilgrim, but he is a stealer of women.' 259. And if they say this, no householder will give us shelter. In thy word and in mine, O daughter of a prince, will they put no trust."

THE QUEEN SPAKE.

260. "Hear me, my King, thou loved one not to be deceived.† One petition, and no more I make unto thee. 261. Like thee will I put around my neck a Ráma rosary. Like thee will I wear nought but a single tight and scanty cloth. 262. My two breasts will I tie up in tattered clothes. I will break six of my front teeth. My tresses which hang down unto my knees, them let me cut and cast away. 263. I will take in my hand a hollow gourd. I will cast a rough blanket round my neck. I too will become a pilgrim. Following thy footsteps will I beg for alms."

THE BURDEN OF HER SONG.‡

264. "O! the pipe of Syám. My mind whirls. My eyes flow with tears."

THE KING SPAKE.

265. "O mighty fate. I am encompassed amidst a net of charms. What love is this which I have for a woman. 266. If thou goest with me, thou wilt be going with a pilgrim. There there are tigers of the wood, and when thou seest them thou wilt be afraid. There there are tigers of the wood, and great is the fear of them that be mighty. 267. When a

* Lit. curries made of cold weather chillies.

† Lit. "English."

‡ This *Duyá* forms the first verse of a song in honour of Kṛishṇa, which is given in the appendix.

man and a woman, in such plight as thou and I, go along the road; the tiger of the wood seizeth the woman and eateth her. 263. Whether the tiger eat thee or eat thee not, he will assuredly kill thee. Why therefore wilt thou kill thyself because thou wouldest follow an ascetic."

269. The damsel began to laugh freely.

THE QUEEN SPAKE.

"Who sayeth these words? and who believeth them? 270. What tiger slayeth and eateth the woman that goeth with her husband? These words are but to deceive, and a pretext for thy flight. 271. Let the tiger of the wood devour me, I fear him not. It is better to die at the feet of my husband than to lead a life of perpetual disgrace. 272. Thou wilt be my banyan tree, and I will be thy creeper. To thy feet will I cling, and then whither wilt thou flee? 273. When I was in my father's house, O pious king, why didst thou not then become a pilgrim? 274. Now I have become a comely woman, and worthy of thee. If thou leavest me and becomest an ascetic, I will surely die. 275. Let the stream of my youth fall down before thee. When the hairs of my head turn gray, then do thou turn pilgrim. 276. The branches of fair jasmynes bend down to the ground (with age). I am now a full grown woman, and how long shall I retain my comeliness? 277. How long shall I keep my youth, e'en though I bind it and tie it down. For continually my heart weepeth for my husband."

THE BURDEN OF HER SONG.

278. "Thou hast wedded me, and thou art going. I weep for thee. Thou hast thy father, and thy brethren; but I, unhappy one, have none. I have left them all for thee, O king."

279. He had chosen Aduná and Paduná, and had married them. A *bhāṭṭa* bráhmaṇ had named her Aduná. 280. He himself had called her Aduná and given her maid-servants.

THE KING SPAKE.

"How can I break such love in my house? 281. I will take alms from one door, and will go to the door of another: easily will I lose my Kshetri birth and my Baniyá caste. 282. Where'er I shall see a woman like thee, my youthful lovely wife, there weeping will I lay me down and die. 283. Where'er I shall see a woman like my lovely wife. First will I address her as 'mother,' and then will I ask for alms."

THE QUEEN SPAKE.

284. "Alas, alas, my own husband, thou hast uttered a black word. Thou hast married me in my childhood, and thou desertest me in my youth."

THE KING SPAKE.

285. "Now also wait thou with thy hand upon thy heart. Until I return after fifty years have passed away."

THE QUEEN SPAKE.

285. "Lift up thy head, O king, and see a pair of juicy cocoa-nuts over my heart. The pair of cocoa-nuts shine forth with lustre. 287. I will open the nuts and put them to thy mouth, thou hast not strength in thy body (to pluck them). It is a fruit, which if a man refuse, he will suffer the pangs of hell four times fourteen times.

THE KING SPAKE.

288. "Hear me, O lady, daughter of Harís Chandra. When a secret hath been divulged, the meaning of its words become plain. 289. In front rideth an elephant's *mahánt*, behind him the king. Far have I gone, and (I have learned that) the great house of my pilgrimage is at a far distance. 290. I have tasted the fruit of the cocoanut and my belly was not filled. In vain have I, a householder, suffered* in my servitude."

THE QUEEN SPAKE.

291. "Hear me, my king. My pleasant loved one, one petition have I to make unto thee. 292. "Do not, O pious king, go to a far country. Give me one little child, that I may keep him in my lap. 293. I will keep him and nurse him in my lap, and I will touch thee when I see my darling child. 294. I will place the sun-shade and staff of thy royalty over my child's head. I will be the mother of the king and will enjoy the kingdom." 295. The queen spoke of a child, and the king heard her words and said,

THE KING SPAKE.

296. "What thou desirest is not a *chíní chāmpá* plantain, that I may mix it with water and give it thee to eat. It is not the fruit of a tree, that I can pluck it, and place it in thy hands. 297. Fate hath not given thee a child. What can I do? 298. I will repeat the charms of the *gurus* of old, and will become a seven months' child within thy womb. 299. Thou shalt call me 'son.' Thou shalt open the covering of thy breast, and shalt give me milk."

THE QUEEN SPAKE.

300. "I spake to thee of a child, and thou speakest to me of milk. Thou art my wedded husband, how can I call thee 'son.' 301. I knew

* Lit. Died. A popular song makes Gopí Chandra charge his wives with intriguing with Khetuwá Lankes'var as a last resource for getting away. But this is not borne out by any copy of this poem which I have seen.

not, O king, that there were but a sheep* and a jackal within thy heart. Not one *kāori* of sense hast thou in thy body. 302. (Thy mother) because she is a widow, wisheth to make her daughter-in-law a widow too. Even if my husband pass her house, (jealously) doth she turn her eyes upon him."

THE KING SPAKE.

303. "Ha! thou daughter of a vile one; thou hast abused my mother. I might have stayed a few days, but I will go to-morrow." 304. He could not bear the childishness of the damsel, and so the fair king went to the place of audience. 305. (There was a grove) of twelve *supāri* trees and thirteen *tāl* trees, and in its shade sat the king's son. 306. The brāhmans and the relations all sat in a row, and Bīr Simh, his Bhāṇḍārī, gave him the accounts of the kingdom. 307. On a golden seat sat Mayanā with her feet on a silver stool. The Lady Mayanā went to the audience of her good son. 308. The full cutcherry hummed with the noise of the crowd, and there the fair Mayanā stood. 309. When the king saw his mother, he made obeisance; as he made obeisance, he tied his cloth around his neck.

MAYANA' SPAKE.

310. "Long live the widow's son. May Dharma bless him. May the years of his life be many as the sands of the sea. 311. I thought the widow's son had gone to be a pilgrim; but lo, till to-day he is here with his fair wife. 312. The Satya Yuga is passed, we are in the second Yuga, the third Yuga will come. But in the Kali Yuga sons will marry early. 313. The Kali era is a foul era, and hath now approached. Each sitteth alone and enjoyeth another's wealth. 314. Kings will no longer do justice in their kingdom, and sons will no longer offer sacrifices for their fathers. 315. Wives will no longer be faithful to their husbands. Pupils will no longer reverence their teachers. 316. Behold, four miscreants went to destruction. 317. The miscreant who doth not reverence his teacher, him even jackals will not eat. Even crows will not touch the body of a Vaishṇava. 318. Let a miscreant be cast into fire and he becometh dust and ashes. Let him float upon the water and he becometh food for fishes. 319. He is buried beneath the earth and he becometh food for worms. No where do I see salvation for a miscreant."

THE BURDEN OF HER SONG.

320. "My darling blue lotus, how canst thou become an eremite? Men will say there goeth one who hath no mother." 321. The king made up his mind to be a pilgrim, and at a cross-road his queen began to weep.

* *I. e.* That your heart contained nothing but cowardice and treachery.

THE QUEEN SPAKE.

322. "How canst thou wish to go to a far country? Oh wait and pass the charms of Mayaná through an ordeal. 323. Oh put her to the test of burning oil. If she survive that ordeal, then shave thy head and go forth a pilgrim." 324. The king heard this and hastened to the hall of audience. 325. He sat in the audience chamber, and could not make up his mind. Often and often he called for his servant Khetu, his younger brother.

THE KING SPAKE.

326. "My servant Khetu, take heed unto my words. Go* unto my mother's palace." 327. On hearing this, the servant did not delay. 328. "Say this to Mayaná—('Thy son) would put thee to the test (of burning oil')." 329. Hearing these words, Mayaná laughed. "This is not thy thought, but a conspiracy between thy wives. All the thoughts they teach thee, will become barren. 330. Instead of one ordeal, I will pass through seven, and then will the Prince leave his house."

THE KING SPAKE.

331. "I say unto thee, Khetu, and take thou heed unto my words. 332. Build thou up a furnace deep and wide. Strip off the three fibres of three cocoa-nuts, and place the bare (nuts round the furnace as supports for the cauldron)." 333. Khetu set a cauldron holding sixty *mans* upon the furnace, and into the cauldron he poured eighty† *mans* of oil. 334. He cast upon the flames fuel of *sál* wood, and set it blazing. Over all he placed a cover. 335. For seven days he ceaselessly added fuel. 336. One day, two days, five days passed. After seven days he lifted the cover. 337. "The oil is hot, even as fire," such words did Khetu speak unto the king. 338. "Thy servant was ordered to make (preparations for) the ordeal by oil. 339. What command hath the king of kings for his servant?"

THE KING SPAKE.

"Go and say this unto my mother. 340. 'The ordeal by oil is ready before the king. The king doth summon thee; O Mother, come quickly'."

MAYANA' SPAKE.

341. "Do I eat at thy fathers' hand, or at the hands of the fathers of the king. At thy command, what ordeal shall I pass through?" 342.

* Note the force of *बल* here, and in vv. 328 and 332. It has entirely lost any special meaning of its own; and is used as a pure expletive to add strength to an imperative.

† Sic in original.

These words Khetu told the king, who heard them, and became furiously enraged. 343. The king took his evening towel for washing his body, and flung it to Khetu. 344. And Khetu shook that towel, and with it bound tightly the lady Mayaná, and cast her into the oil. 345. Even as the lady Mayaná fell amid the oil, the flames rushed up with a roar to heaven. 346. Mayaná sunk into the oil up to her neck, and, as she did so, she took the oil into her hands and patted it into her head as if she were bathing. 347. Seeing calamity (approaching) the king became furiously enraged. He called Khetu, calling him, "Slave, slave," and began to abuse him. 348. "Lift up the cover and place it over my mother, and for nine days continuously, do thou add fuel to the flames." 349. One day, two days, three days passed away. But Mayaná concentrated herself and took the form of a grain of mustard. 350. After nine days, Khetu lifted up the cover and when he could not see the queen, he began to cry. 351. Thus did he say unto the king. "Thy mother is dead, and gone to Yama's abode. 352. Wherefore dost thou keep thy *págarí* on thy head? Behold (I am unclean) and the assembly of bráhmans will not drink water at my hand." 353. The king cried "Mother, mother" and began to weep.

THE BURDEN OF HIS SONG.

354. "Fate hath made me motherless, O lord of the unhappy. Such was written in my destiny. No longer will I see my mother." 355. He took a handful of twigs in his hand and began to search amidst the oil. 356. Once, twice and thrice he searched. At the third time of searching he fished up the towel. No trace of Mayaná's body was within the fire. 357. Sixteen men took the cauldron on their shoulders, and they flung out the oil at a place where three roads meet. 358. With a loud roar the flames rose to heaven, but Mayaná in her form of a mustard seed remained hidden in the *Dub* grass. 359. Suddenly Khetu began to weep, and when she heard the sound of his weeping, Mayaná felt pity for him.

MAYANA' SPAKE.

360. "Weep not, weep not, Khetu, my servant. Cease thy tears. I am Mayaná. I have not been burnt within the furnace." 361. He took up the sixty-man cauldron in his hand and brought it before the king. 362. Mayaná in fact underwent seven ordeals, and passed them all.

THE KING SPAKE.

363. "Hear, O lady Mayaná, my mother. From what *siddha* hast thou learnt thy magic arts?"

MAYANA' SPAKE.

364. "Thou askest me from what holy man I have learned my arts. I have learned them from Gorakh Náth himself. 365. I tell thee, learn

thou thy knowledge from Kholá the Háđi." 366. When the king heard the name of a Háđi, he stopped his ears with his hands. For she had uttered an impious word with her tongue.

THE KING SPEAKS.

367. "A Háđi is of a vile caste. He cleanseth privies and doth not bathe. Shall I, a king, make obeisance to a Háđi for twenty-two *daṇḍas* !

MAYANÁ SPEAKS.

368. "Hear me, my child, speak thy words in a whisper, so that the Háđi may not hear. If he cursed thee, thou wouldest die at once. 369. Thy subjects feed their lamps with oil and *ghí*: but that Háđi feedeth his lamp with merely Gangá water. 370. As many lamps as there are in the houses of thy subjects, so many hath that Háđi in his little hut 371. In whosoever house he eateth, to whosoever house he goeth, simply at the word of his mouth he causeth the sea to stop its motion." 372. The king sat in his audience chamber and could not make up his mind. Repeatedly he called his servant Khetu, his younger brother. 373. "Where hast thou gone, my brother? First would I eat *pán*,* then I would have the *paṇḍit* of the days of my father come to me." 374. Khetu heard these words and made no delay. He hastened towards the *paṇḍit*'s house. 375. "I say unto thee, O reverend *paṇḍit*, and pay thou heed unto my words. The king would see thee in his palace. Haste thee to the hall of audience." 376. He dressed himself in a *dhufi* of modest kind. Loosening out his brahmanical cord, so that the threads appeared in pairs, he passed it round his neck. 377. He took his papers relating to the Almanac under his arm, and proceeded to the king's hall of audience. 378. The hall was full, the crowd gave forth a confused noise. At this time did the *paṇḍit*, the son of a *paṇḍit*, present himself. 379. "Incarnation of justice" he said and made obeisance. "Tutelary Deity of my family" said the king making obeisance in return. 380. He called him "Reverend Brother," and made him sit upon the couch. "O reverend Sir, thou art the crest-jewel among prophets. 381. What day will the king sew for himself a beggar's wallet and quilt? What day will the king shave his head? 382. What day will the great king besmear himself with ashes? What day will the pious king pierce his two ears? 383. What day will the pious king wear nought but a *langufi*? What day will I carry a beggar's platter in my hand? 384. What day will I start for a far country? Read me aright, and prophesy me this." 385. Taking every precaution to ensure good luck, he produced his Almanac. Such power was there in that Almanac that it could speak itself.

* That is to say, "immediately." Chewing *pán* is such a mechanical and continuous action with a Rangpurí man or woman, that the phrase "to do a thing after eating *pán*", means to do it at once. Cf. vv. 398, 553 and 692.

THE BOOK SPAKE.

886. "On Tuesday will he sew his wallet and his quilt. On Wednesday will he shave his head. 887. On Thursday will he besmear himself with ashes. On Friday the king shall pierce his two ears. 888. On Friday the king shall pierce his ears, and on Saturday shall he put on a *languṣi*. 889. On Sunday the king shall take in his hand a beggar's platter; on that day the king shall set out for a far country. 890. He will take thee from thy home and will give thee advice and hope. For some days he will distress thee in the midst of the forest. Other sorrow will he give thee in the sandy waste. 891. Other sorrow will he give thee in the city of S'rikalá. He will pawn thee for food in the house of Hírā the Harlot. 892. The Harlot's dress will be a linen *sári* bright as fire. Thy dress, O king, will be a knotted rope. 893. Unsifted rice will she give thee and *brinjals* full of seeds. She will give thee *brinjals* full of seed, and thou wilt burn them and eat them. A pitiless harlot is she; thou wilt be forbidden oil and salt. 894. The harlot will seek the privy, and it wilt be thou who wilt cleanse it. Thou shalt close thy eyes, and proffer her the water of her sin.* 895. Early in the morning shalt thou rise, and she will beat thee with a broom. Thou shalt lift up the bed of her sins, of countless, countless sins. 896. *Bhángi* ropes will she give thee and a *bhángi* stick and two water jars. Twelve loads shalt thou measure out every day."

THE KING SPAKE.

397. "Hear, Reverend Sir. Happiness and misery are written in our destiny. Methinks, I see death written by the Creator in my fate. 'Tis not in two syllables and a half that it can be cancelled." 398. Brother Khetu, where art thou gone? First would I eat *pán*. Then would I give the Bráhmaṇ a present and bid him good speed." 399. He gave him a present and bade him speed. "Make present the barber of my father's time." 400. He went to the *nápit* and called him to the king, saying "Brother, fetch thy razors and come." 401. The hall was full. The crowd gave forth a confused noise. At this time did the barber, the son of a barber, present himself. 402. Even as the pious king saw the barber, he descended from his throne†; and as he did, the theatrum of the temple, and other walled buildings fell to the ground. 403. The forest trees, and the shrubs, the very leaves of the trees began to weep. The forest deer bent their heads

* Not a literal translation.

† The word used is "*pát*". A *pát* in Rangpur is the term used for one of those solid blocks of masonry found here and there in the district. Kings of the olden days are said to have sat upon them, and there to have dispensed justice. One of them, however, (*Harís Chandra Rájár Pát*, see fig. 3), is almost certainly a tomb.

and wept. 404. At the *ghát* of the *Ghátwál* there were twenty-two *káhans** of ships, and they all wept. Twenty-two *káhans* of ships wept and twenty-three *káhans* of boatmen, and amongst them Vis'ves'var the boatman also wept. 405. The deer-park wept and the children's summer-house. Even the school of harlots wept. 406. The *Ṭiṭiyá Manjar* wept within its cage. And nine *budis*† of dogs wept as they were hunting. 407. The hospital and the *toshá-khána* wept at intervals. Water-houses, summer-houses and cow-houses‡ (?) wept in countless number. 408. In the elephant stalls, the elephants wept. In the stables, the horses wept. In the throne-room, all the dresses were wet with tears. 409. A hundred cows wept, throwing their tails round the king's neck §; and nine *budis* of dogs wept at his feet. 410. A hundred queens rolled upon the earth and wept. Aduná and Paduná clasped his feet and wept.

ADUNA' AND PADUNA' SPAKE.

411. "Alas, alas, my husband, my wealth. Thou art deserting me. Who now will protect me, and bring me *ghí* and rice to eat?" 412. The king's mother wept with tears falling from her eyes, and they brought a jar of Gangá water. 413. They brought a leaf of a Newáij tree, and they poured water on him from a golden cup. 414. As they poured water on the head of the king, the royal throne quaked. 415. The barber grasped his razor and gazed around. But he received no order to shave the king.

MAYANA' SPAKE.

416. "O barber, towards whom art thou looking? Scorn not thou to shave the head of my darling. Diamonds will I give thee and mounted work; pearls will I give thee as a token. 417. Shave off all his hair, leave only one crown-lock. If thou shavest it off, thereby wilt thou lose thy quilt and wallet." 418. He took his razor in his hand and for a hundred days the king's hair fell upon earth. It became a hairy Gangá and began to flow away. 419. Mayaná uttered "*Tuḍu, Tuḍu*" with a terrible cry, and sixteen hundred *Munis* came down on hearing it. 420. In his chariot of flowers descended Gorakh the Vidyádhara. On a flail came riding Nárada, best of munis. 421. On the back of Vásoyár descended the mighty Bholánáth. On bow and arrow came down Ráma and Lakshmaṇa. 422. In different directions descended the five Pándava brothers. There

* A *káhan* = 16 *pans* of 20 *gaṇḍas* or 1280.

† A *budí* = 5 *gaṇḍas* or twenty.

‡ The meaning of *gokula* here is unknown to every one whom I have consulted.

§ I know of no other flight of poetry equal to this in the whole poem. I have tried hard to persuade myself that the translation is incorrect; but in vain. The words are too plain to admit of any other meaning.

is no counting the number of Hāḍi *Siddhas*, with their ears cut. 423. A Hāḍi hid his face with the dust of cow-dung fuel; and seeing danger at hand, Mayanā began to weep.

THE BURDEN OF HER SONG.

424. "The apple of his mother's eyes. Alas, my child! Who took my own away?" 425. They snatched the razor from the hands of the *nāpit*, and gave it into the hand of the ear-cutter. 426. Even as the ear-cutter took the razor in his hand, he cried "*Rām, Rām*" and cut both the ears of the king. 427. They fastened to the king's ear an ear-ring of crystal. They clothed him in a cloth covered with holy symbols. 428. Five Vaishnavas came and dressed the king in a *languṭi*. A *languṭi* with a string did they put upon him. 429. They placed round his neck a *Rāma* rosary. They put into his hand a gourd-platter. 430. A torn quilt, a torn *languṭi*, a torn (heart at) departure. All the followers of Chaitanya were collected near the door. 431. Holy Chaitanya and Nityānanda, also Rādhā, Sītā, and the High Priest of the Vaishnavas sang the Holy Lay. 432. The king's son began to weep, and cried for alms. His servant Khetu gave him alms: elephants, horses, his royal staff and umbrella. Those alms he placed with reverence at the feet of his *guru*.

THE GURU SPAKE.

433. "Depart, depart, O king, I give to thee a boon. Thou shalt go to the three corners of the earth, but shalt not go to Yama's dwelling-place." 434. As the king turned his head to one side, all the heavenly *Munis* returned to heaven. 435. Mayanā bathed herself in five *loṭas* of water, and glad in heart she entered into her own home. 436. In a moment,* she cooked a dish of rice and fifty curries. She touched it, and placed it in a golden dish. 437. She filled a golden vessel with water. "Eat, eat my darling. Happy and light of heart, go thou on thy pilgrimage." 438. When he saw the rice in a (golden) plate, he struck his forehead with his hand, and wept.

THE KING SPAKE.

439. "When I was lord of my kingdom, O my mother, then did I eat rice in many a golden dish. 440. Now I am a beggar, not worth a single *kāori*. I cannot eat from a golden plate." 441. He took a plantain leaf and cut it. Thereon he placed a little rice. 442. He took the shell of a broken gourd and from it he drank a little water. 443. He washed his face and hands with water. Then what did he do? He uttered the words "S'ri Kṛishṇa" and ate the food. 444. One mouthful, two

* Lit. at a stroke.

mouthfuls, five mouthfuls he ate. Then he looked towards the water, which was trickling out of the broken gourd. 445. He put his face to the earth and sipped up the water, and as he did so Devī's brother S'ani* came over his destiny. 446. S'ani and Ketu took up their abode in the king's heart. And all his body became defiled. 447. Then Mayanā wept in pitiful accents.

THE BURDEN OF HER SONG.

448. "My son is all my fortune. Who will make us meet again. 449. Thou art going to a far country. Thou wilt dwell in the house of a strange woman. First the householder will eat and then he will think of thee. 450. When thou seest an Atīta or a Vaishnava do not thou despise him. With thy head touching the ground reverence thou him who weareth a rosary. 451. When thou shalt see the mustard plant scanty, and the *dub* grass thin; then wilt thou know that thou art in a far country."

THE KING SPAKE.

452. "If I see a flower, I will not pluck it. If I see a bird, I will not fling a stone at it. 453. If I see another's wife, I will not smile at her. First I will call her mother, then will I ask for alms." 454. She put sixteen *kahans* of *kāorīs* in his wallet. "See that thou tellest not thy guru about these *kāorīs*." 455. "In dust and ashes will I spend the money. Following the Hādi will I go to Yama's abode."

456. The hundred queens went to Khetu. But Adunā and Padunā went to their own palace. 457. In that palace, there were guards in twelve places, and thirteen *thānds*. No Atīta or Vaishnava was allowed to enter that house. 458. And e'en as the two damsels entered their dwelling-place, the doors of virtue shut themselves without keys. 459. They set themselves to play at dice in silence.

THE QUEEN SPAKE.

460. "What day the dice will fall from my hands in disorder, I shall know that that day my husband is dead."

461. The burden of the kingdom remained in the lap of Mayanā, the king's mother. And the Hādi and the king started for a city in a far country. 462. One *kroś*, two *kroś*, five *kroś* he went. And the king's feet were cut and covered with blood.

THE BURDEN OF HIS SONG.

463. "Alas! Fate, sitting in a lovely place, hath written misery on my destiny." 464. One day, two days, seven days passed. Night and

* S'ani and Ketu of course mean ill-luck. If, however, by "Devī" is meant Durgā, she is certainly not S'ani's sister.

day he journeyed on. 465. So the king left his home and went to another country, and the Hāḍi said, "Glory to fate. This is the fruit of my destiny."

THE HA'PI SPAKE.

466. "A proud word did the king speak concerning me. Verily, in a short space, I will bring him into trouble." 467. "*Tuḍu, Tuḍu*," cried he, with a terrible voice; and in the atmosphere that wondrous Hāḍi created a forest. 468. They passed through a small forest, and came to a great one. The spittle in the king's mouth was dried up, nor could he speak. 469. In the vacant atmosphere the Hāḍi went along. While the king toiled slowly along, thrusting the *jāṅgal* aside with his hands. 470. Prickles pierced him and thorns pierced him. His blood poured forth in streams. He could not travel further, and (in despair) the king struck his forehead with his hand.

THE BURDEN OF HIS SONG.

471. "To whom shall I tell my woes. Even my guru hath become pitiless." 472. More pangs he gave the king. He took him through a sandy waste. At the king's tears the Hāḍi's heart was touched, and he created a pleasant Kadamba tree upon the road. 473. The king went to a place deep (under the foliage) by the foot of the tree, and sleep came upon him in handfuls.

THE KING SPAKE.

474. "What with ploughing through water, and what with ploughing through sand, I have undergone great hardships. Place thy left thigh upon the ground, that I may rest awhile. 475. The Hāḍi laid his left thigh upon the ground, and the king rested his head upon it and fell asleep. 476. The Hāḍi cried "*Tuḍu, Tuḍu*" with a loud voice, and summoned an hundred Yamas.

THE HA'PI SPAKE.

477. "Hear, O ye Yamas, take heed unto my words. Build ye a road from hence to Daryápur, seven cubits broad and chest high." 478. The Yamas heard his words, nor did they delay. They departed to build the road. 479. From thence to Daryápur they built the road, seven cubits broad and chest high. 480. "*Hanumán*" he cried with a loud voice, and made them plant trees at intervals along the road. 481. He smote the king with a slap like a thunderbolt, and crying "Guru, Guru" the king arose, weeping.

THE HA'PI SPAKE.

482. "I have built a road with great labour. Give me twelve *káoris*, that I may buy happiness and enjoy myself. 483. I would buy and eat

twelve *kāorís* worth of *gánjá*: then will I take thee on to Ghádapur." 484. When the pious king heard these words, he closed his ears, and cried "Rám, Rám."

THE KING SPAKE.

485. "I know nought of such a thing, O father guru. He who goeth with such a transgressor, will surely die. 486. Nay, nay, there is no need of binding me. Instead of twelve *kāorís* take twelve *káhans*, and return unto thy house." 487. The Hádi was in contemplation and suddenly started. 488. He went into contemplation and gazed about, and in his contemplation his eyes fell upon the sixteen *káhans* in the king's wallet.

THE HA'PI SPAKE.

489. "His mother excelleth me in charms. She hath put sixteen *káhans* of *kāorís* in his wallet." 490. He cried "*Tuḍu, Tuḍu*" with a loud voice, and took the sixteen *káhans* of *kāorís*, and flew up into the sky. 491. He created two stones weighing half a *man* each, and put them into the wallet. And the pious king took his *bhāt* and began to eat. 492. "Give me, give me the *kāorís*," he began to coax. But after saying so twice or thrice, he became angry. 493. The king opened the wallet and became amazed. Wonderful thing! No *kāorís* were within the wallet.

THE BURDEN OF HIS SONG.

494. "Why do my eyes dance in my head? I know not what is written in my fate. 495. Why, why, O father guru, hast thou wrongfully given up pity? In my wallet there are no *kāorís*. Give me, unhappy one, in pawn for the *kāorís* I have promised." 496. Immediately the Hádi called his mother-earth to witness. "I call thee to witness, that he himself hath offered himself in pawn. 'Tis not the Hádi who hath given him." 497. He put the pious king in his wallet, and took him to the city of Dar-yápur.

THE HA'PI SPAKE.

498. "A man for pawn, a man for pawn. Take him, O mother, thou seller of milk. I would pawn him for twelve *kāorís*. I wish to get twelve *kāorís* to eat *gánjá*."

THE GOWÁLÍNÍ SPAKE.

499. "See, see, we would see what kind of pupil this is of thine." 500. He pulled the king out by one hand, and the king arose radiant in person.

THE GOWÁLINÍ SPAKE.

501. "I perceive that he is of beautiful form and accustomed to eat royal food.* Can such as he eat in the house of a Gowáliní? 502. Fill up my milk-pail with money, and fill up thy wallet again. Leave my quarter of the town, and go thou elsewhere." 503. He seized the king by the hand, and wandered about amongst the shop lanes. 504. "A man for pawn, a man for pawn, O mother, thou seller of crushed rice" and as soon as the crushed rice-seller saw the king, she upset her stall of crushed rice. 505. She clasped him round the waist, saying, "I die (of love for thee)"; and with great difficulty the king separated himself from her. 506. "A man for pawn, a man for pawn, O mother, thou seller of turmeric. A man for pawn, a man for pawn, O mother, thou seller of *ság*. 507. A man for pawn, a man for pawn, O mother, thou seller of vetch. A man for pawn, a man for pawn, O mother, thou seller of pease." 508. And as soon as the seller of pease saw the king, she immediately called her own husband her father. 509. She upset her stall; she caught the king by the waist exclaiming "I die." 510. The crushed rice-seller arose and said to the pease-seller "You get away. Let go the waist of the king. I first caught hold of him." 511. They both caught him by the waist and began to pull; and of a sudden the king began to weep. 512. The Hádi felt pity at the tears of the king, and called on Indra with a loud cry. 513. With great noise, hail began to fall in the *bazár*. And they let go the king's waist, and every one went to her house. 514. "Don't stop up the door, don't stop up the door, O sister, seller of pease. Don't you see that I'll catch my death out here in the wet"? 515. And when the seller of pease heard that word, she made a great fuss, and left the door free for passengers. 516. The Hádi took the pestle for pounding pease, and with it began to pound the king. 517. He cut the king's nose, and his hair, and made proclamation by beat of drum. He put his hand upon the king's neck, and pushed him out from that *bazár*. 518. He left that locality, and went to Vijaya the ploughman, and stopped before him. 519. "A man for pawn, a man for pawn, O house of a *halwá*." 520. "Outwardly† he is of comely form. How can he eat in the house of a ploughman? 521. Fit for him is the house of Hírā, the harlot; but how wilt thou go within her house? 522. She hath hung a pair of drums by her door, and if the king of any quarter come to her abode, 523. And if he strike the drum one blow, she will demand a thousand rupees at the door." 524. Vijaya went away with them, and showed them the harlot's house. 525. He took down the stick and smote the drum, and by its sound his arrival was made known in the house of the harlot. 526. She

* Lit. "a king over his *dhāt*."

† Lit. over the vessel.

began to call to her maid-servant. "The king of what country has now come? Allow him to enter, and fan him with a *chāmara*." 527. The maid-servant heard her, nor did she delay, but went into the presence of the Hādi.

THE MAID-SERVANT SPAKE.

528. "Why, Reverend Sir, hast thou come so far a distance? Why hast thou left thy throne, to lie upon the earth?"

THE HA'PI SPAKE.

529. "It is not bamboo oil vessels, nor *bazār* cups that I carry in my wallet. Herein have I a pupil. 530. I would pawn him for twelve *kāoris*, to buy *gānjā* that I may eat. 531. Will Hírā, the harlot, take him in pledge?"

THE MAID-SERVANT SPAKE.

"Let me see, let me see what sort of pupil he is." 532. He pulled him forth by one hand, and the king arose radiant in person.

THE BURDEN OF HER SONG.

533. "On seeing his beauty, my eyes run with tears." 534. The maid-servant told the harlot what she had heard. "The king is more beautiful in his feet than thou art in thy face. 535. The king for whom thou hast been offering sacrifices these twelve years; him thou hast found at thy very door." 536. On hearing this, the harlot did not delay, but went before the king.

THE HA'PI SPAKE.

537. "Hear, oh harlot, what I have to say unto thee. A good pupil is this whom I would pledge with thee. 538. I would pledge him for twelve *kāoris*, that with them I may buy *gānjā*." 539. On hearing this, the harlot did not delay, but sent to the *bazār* for a *sāud* banker. 540. She collected the paper and pens and counted out twelve *kāoris*. 541. In a clear voice, the Hādi told the banker to write, and he wrote the year, the date, and the word *S'ri* on the paper. 542. He wrote the name of Hírā, the harlot, on the paper and also the twelve *kāoris*. 543. He wrote the name of Dharma on the paper, and threw the pen to the Hādi. 544. And when that mighty Hādi took the pen in his hand, he uttered the words "Rām, Rām" and made his signature. 545. She counted out the twelve *kāoris* and gave them to the Hādi, who on his part made over the king to the harlot. 546. And from the day that the Hādi gave the deed into the harlot's hand, the king lay pawned with her. 547. The Muni Hādi tightly tied up the passions of the king and made him neither a woman nor a man. 548. When Hírā, the harlot, turned her head to one side, he

buried the twelve *káorís* in the earth. 549. And when the pious king turned his face away, he turned himself into a golden pumpkin and went to the regions of *Pátála*. 550. Beneath fourteen fathoms of water he took his magic seat, and for twelve years he stayed there in contemplation. 551. When the king turned round again, and could no longer see his Guru, he began to weep.

THE HARLOT SPAKE.

552. "O king, why dost thou weep? For thy sake I have been doing penance these twelve years. 553. Where art thou gone, my maid-servant? Bring me *pán* to eat* and then bathe the king, and make him put on all the radiancy he can." 554. The maid-servant brought the king after bathing him. The harlot well knew how to spread a bed. 555. Over a coarse mat she spread fine mats as high as the chest, and over all she laid an *indra-kambal*.† 556. She made ready cloves, nutmegs and camphor for eating: so much, that there would be no counting the number of times the king would spit. 557. As soon as the pious king entered into the room, she took him in her lap, and sat him on the bed, and offered him a vessel of *pán*. 558. "Eat a *khili*‡ of *pán*, and eat a single betelnut, O king. Lift up thy head and gaze upon this luckless harlot." 559. The king was pleased in his heart when he saw the cloves, nutmegs and camphor, and at one time she gave him four or five *khilis*. 560. Once, twice, and thrice he bruised the *khili* in his fingers, and then the warning of his mother came into his remembrance. 561. "Thou art going to a far country. Thou wilt dwell in the house of a strange woman. First the householder will eat, and then he will think of thee. 562. When thou seest an *Atíta* or a *Vaishnava* do not thou despise him. With thy head touching the ground, reverence thou him who weareth a rosary. 563. If thou seest a flower, thou shalt not pluck it. If thou seest a bird, thou shalt not break its eggs. 564. If thou seest another's wife, thou shalt not smile at her. 565. When thou shalt see the mustard plant scanty, and the *dub* grass thin, then wilt thou know that thou art in a far country." 566. When the words of his mother came into his mind, the king cried, "Rám, Rám," and flung the *khili* of *pán* away. 567. Thereupon the harlot became angry, "Why, O king of kings, dost thou not eat the *pán*? For thy sake I have been doing penance these twelve years." 568. She took five *khilis* in her own hand, and put them in the pious king's mouth, but he cast them out, saying "*thu, thu*." 569. As the king moved

* See note to v. 373.

† A kind of blanket.

‡ See note to v. 53.

from place to place and sat down, the harlot followed him and sat close up to his body. 570. She began to scatter white and red sandal-wood over his body, but the king began to call her "Mother, mother", and she replied "My heart doth not let me, O king, be called 'mother' by thee." 571. The harlot placed the king's hand upon her heart, but he called her mother, and asked her to suckle him. 572. Once, twice, and thrice the king became angered. He even three or four times abused the harlot.

THE BURDEN OF HIS SONG.

573. "I tell thee the words of thy heart. Unholy is such love. Vainly hast thou lit thy wax candle, and passed a waking night. I am blessed by Rāma; and Kubujā was not (loved by Krishṇa) as Rādhā was. 574. A harlot hath no loveliness within her, her beauty is nought but copious locks of hair. She is but a gift fit for a barber, like the *dhaturī** flower. 575. I see a harlot's dealings to be like a ferry-boat. Men pay *kāorīs* at the landing-stage, and pass over. 576. I see thee, O harlot, to be like traffic in things of no value. Thy beauty is like that of a dark well. Low caste *hādīs* and *doms* as well as brāhmanas, bathe (to wash off the defilement) after touching thee." 577. For four watches, the harlot argued, but still the pious king addressed her as "Mother." 578. Once, twice, and thrice did the harlot become angry, at last she kicked the pious king off the bedstead. 579. She called for her maid-servant, who turned the king out with her hand on his neck. 580. The harlot's dress was a linen *sāri* bright as fire; but the king's became a knotted rope. 581. Unsifted rice and brinjals full of seeds she gave him; brinjals full of seeds, and he burned them, and made chutney of them. A pitiless harlot was she; she forbade him salt and oil. 582. In the cold month of Māgh, she gave him an old tattered *sāri*, and a goat hut to live in. 583. *Bhāngi* ropes she gave him, and a *bhāngi* stick, and two water-jars. Twelve loads of water did he measure out the livelong day. 584. If one amongst the twelve was not supplied, in payment for it seven men would beat him. 585. He took *bhāngi* ropes and a *bhāngi* stick and two vessels of water; and he went to fill them at the Karátōyā river. 586. One, two, or three loads he filled. The whole day the Mahārāja was carrying the twelve loads. 587. Seven vile men seized the king and laid him on his back and then the harlot would put on her feet golden pattens. 588. Hīrá, the harlot, after bathing would laugh gleefully, and proudly stand upon the king's chest. 589. After bathing her body, she shone with excessive brilliancy, and she took off her wet clothes, and put on a dry linen *sāri*. 590. The wet clothes she would wring out over the king's face. At midday the king would cover his face and

* Fair to look upon, but has no scent.

weep. She then would seize him by the neck and thrust him out. 591. What with to-day and what with to-morrow twelve years passed. 592. He took *bhāngi* ropes and a *bhāngi* stick and two water-jars, and went to draw water at the river Karátotyá. 593. On the bank of the river, the king became giddy and fell into the river. "Alas! I heard not the words of Aduná and Paduná, and have lost my life through attending to the voice of an old mother."

594. Even as the pious king mentioned the names of the damsels, the dice fell from their hands in disarray. And lamentably they began to weep. 595. "Twelve years have passed and my husband doth not let his voice be heard, and now the thirteenth year has come. 596. To-day why have the dice fallen in disorder? Of a surety my husband is dead and gone."

THE BURDEN OF HER SONG.

597. "My love, how may I go forth? To-morrow at dawn and in a lonely place will I tell thee the tale of my woes. He playeth his pipe in Vṛindávana: and my heart saith unto me, let me go and see Kṛishna." 598. The two sisters went out to the theatrum of the temple in tears. And a jay and a parrot from their cage heard them weeping.

THE JAY SPEAKS.

599. "O parrot, my elder brother, let us see why our mother weepeth." 600. They united their strength and burst the bars of their cage, and through the broken walls they flew away. 601. After resting* for a moment on the straw of the thatch, they each alighted on the arm of the damsels. "Why, why, mother, art thou crying in the theatrum?" 602. The damsel said, "Listen to me, ye two dear birds. Your father should have returned according to his agreement after twelve years. It is now the thirteenth year and he hath not come. 603. Why did the dice fall in disorder from our hands? Of a surety I believe that your father is dead and gone." 604. "Mother, let us two loose. We will search where our father is." 605. "Speed ye, speed ye, my pretty children, to a far country, and find out where your father is." 606. The birds made obeisance at the feet of their mistress, and flew away in a southern direction. 607. For seven days the birds flew, but found no trace of the king. 608. On the banks of the river there were a banyan and a píppal tree, and the birds flew and rested on a branch of the banyan tree. 609. The birds flew from the western branch to the eastern branch, and underneath them passed the king bearing his burden. 610. He descended into the water and cleansed his teeth, and over his head the birds began to hover.

* Lit, Scratching.

THE BIRDS SPAKE.

611. "Art thou the king Gopí Chandra? We two brothers have come for news of thee." 612. He stretched forth his arm, and the two birds settled down upon it. 613. The eyes of the king flowed with affection, as he commenced the tale of his woes. 614. He plucked the leaves of some wild plants (that grew by), and with his teeth he mended a reed pen. 615. He cut his left thigh with his little finger, and wrote a letter with the blood. All his woes he wrote within it. 616. "If thou art a good mother, thou wilt rescue me. If thou art a bad mother, thou wilt leave me in sin." "This letter give ye to your grandmother." 617. The birds made obeisance to the king and flew off to Mayaná's abode. 618. They made a hole in the roof and threw in the letter "See, see, oh Grandam, see if thy head* is in this?" 619. If thou art a good mother thou wilt rescue him." 620. She opened the envelope and began to read: and lamentably the birds began to weep.

THE BURDEN OF HER SONG.

621. "My son left me in the morning. I fear that he hath died in the fierce heat of the sun." 622. Mayaná went into contemplation and gazed around, and her eyes fell upon the Hádi sitting beneath fourteen fathoms of water. 623. She brought into play her magic art called *kharupá* (or cutting), and she cut away the Hádi's seat of contemplation and himself. 624. He began to float away through the cold sea; but Mayaná seized him by the hair and pulled him on land. 625. She struck him a slap forcible as a thunderbolt; and the Hádi who was still in contemplation got up with a start. 626. In his contemplation the Hádi gazed around, and his eyes fell upon Mayaná. 627. "O sister, I am going to the king. I will first rescue thy son, and then will I eat my *gánjá*."

MAYANA' SPAKE.

628. "If I find that my son hath learned only a few charms, I will burn thee, O Hádi, to ashes, and send thee to Yama's house." 629. The Hádi started, and arrived at the *ghát* where the king was sitting. 630. As soon as the king saw the Hádi's face, he laid down the two water-jars and broke them. 631. He divided his hair in the middle and fell at the feet of the Hádi. 632. Thereupon the Hádi put him into his wallet and carried him off to the harlot's house. 633. When he arrived there, he uttered a loud cry, and the whole city began to quake with a rumbling noise. 634. The harlot said to her maid-servant "Daughter, see who it be. If it be a beggar, send him away." 635. The maid-servant hastened to the door and when she saw the Hádi she returned to her mistress. 636.

* i. e., if this concerneth thee.

She said unto the harlot, "It is not an Atíta, but the Háqi the lord of Lanka." 637. When the harlot heard this, what did she do? She went inside the house and hid herself. 638. The harlot said to herself "I am hidden." But the mighty Háqi saw her by his power of contemplation, and grasped his staff. 639. "I tell thee my staff, and pay thou heed unto my words. Bind Hírá, the harlot, and bring her forth." 640. The staff received one order as if it were a thousand, and with a roar it entered the harlot's house. 641. It thrust the harlot forth, and then the Háqi took up the twelve *káorís*. 642. The harlot brought forth the deed executed twelve years ago, and he counted into her hands the twelve *káorís*. 643. She gave the deed into his hand, and the Háqi said, "Rám, Rám," as he tore it up. 644. The Háqi brought a cauldron of Ganges water, and seven vile men seized the harlot and threw her on her back. 645. He put on the king's foot pattens weighing twenty-two maunds, and stood the king upon the harlot's breast. 646. As he swayed upon her in mounting, he crushed the harlot's thirty-two ribs into small pieces. 647. As soon as the Háqi sprinkled water on the king's head, saying "Rám, Rám," all his sin was put away from him. 648. After bathing his body, he shone with excessive brightness, and he took off his wet clothes and put on a dry linen *dhufi*.

THE HA'PI SPAKE.

649. "O prince, pay heed unto my words. For twelve years the harlot hath done penance in her house. Do thou fulfil to some extent her desires. 650. Go forth, O Hírá the harlot, I give to thee a boon. Become a bat within the kingdom." 651. The Muni's word was not spoken in vain: she became a bat, and flew up to heaven. 652. He caught hold of the harlot in his left hand, and divided her into two parts. 653. The forepart flew up to heaven, but he cast the rear-part into the sea. 654. As she fell into the sea she cried "*dohái*."

THE HA'PI SPAKE.

655. "Go forth, O Hírá, thou harlot, I give to thee a boon. Become a minnow, and dwell within the water. 656. Go forth, go forth, O Chápái, thou maid-servant, I give to thee a boon. Become a harlot, and live within the kingdom. 657. In thy youth earn thy living out of the work of thy caste; and in thy old age, take a *páik* for thy husband. He will beat thee and kick thee and break thy thirty-two ribs. 658. Go forth, O wealth of Hírá, I give to thee a boon. Come into the town of Kholáháti, and be a petty *basár* made of tiles." 659. He utterly destroyed Hírá's house, and then took the king away to teach him magic arts.

THE HA'PI SPAKE.

660. "I say unto thee, O king, and take thou heed unto my words. Go thou into the market and beg for alms. Let us sit together, as *guru* and disciple, in the town of Pardá."

THE KING SPAKE.

661. "I am a king's son, and have become a Brahmáchári. How can I beg? I know not how to do it." 662. So the Hádi gave him three or four directions, and the king took a platter in his hand and went to beg.

THE HA'PI SPAKE.

663. "Victory to fate, this is the fruit of my works. I have in my house a pupil, beautiful in every limb. He will drive the daughters-in-law and the daughters of the householders mad. 664. He changed himself into Nengadi the *Kotwál* and went about fastening the door bars in every house. 665. He is bending forward entreating for alms, and they are setting the dogs at him. He will not get any alms, and will return to the Hádi." 666. The king went about begging, but the Hádi cried out with a loud voice. 667. And from heaven there came down at his call five damsels, who placed five dishes of food before him. 668. He ate his own share, and put aside that of the king with care, and in it he put two and a half times sixteen scores of charms. 669. He mixed it with spittle and phlegm, and added to it the juice of refined* sugar. *Sáíl* seeds, *kela* seeds and *durá* seeds he added to the mess. 670. Meanwhile the pious king went about crying for alms. 671. He bent forward entreating for alms, and they set dogs at him. He was unsuccessful in his quest, and returned to the presence of the Hádi.

THE KING SPAKE.

672. "O guru, the people of thy country I have seen to be pitiless and stony-hearted. They gave neither alms nor charity, and set the dogs at me."

THE HA'PI SPAKE.

673. "Thou hast not obtained alms. It mattereth not, my son. Accept the leavings of my food. I met a pious woman on the road. 674. She gave me a little rice. I have eaten my share, and carefully put some aside for thee." 675. With tottering steps the king drew near the food. And when he saw it he struck his forehead with his hand. 676. A rice which my dogs would turn aside from; such have I, a king, come to eat. 677. "*Tuḍu, Tuḍu*," said the Hádi with a great voice; and the king felt an-hungered as if he had fasted for twelve years. 678. He took

* Lit. covered.

his first mouthful with expressions of disgust, but it came to his taste like sweet ambrosia. 679. When again he put forth his hand to take a mouthful, he snatched at it, thrusting aside the Háđi's hand, and took two and a half mouthfuls at once. And therefrom he learnt two and a half times sixteen scores of charms. 680. By his charms in his meditation he bound up his top-knot as a woman ties it, and embraced the mother of Godá Yama. 681. By his charms, in his meditation, he tied up his top-knot as a man ties it, and lamed Godá Yama himself. 682. The Háđi uttered the words "*Tuđu, Tuđu*" with a loud voice and thereupon the affairs of his home came in the king's remembrance.

THE KING SPAKE.

683. "Give me leave, O guru, and let me journey forth in the bark of virtue. Travelling in a chariot of light, would I see my wife and home, and then return to thee." 684. He placed his staff in the hands of the king, who thereupon fell at the feet of the Háđi. 685. The king carried the stick over his shoulder (although it weighed) eighty maunds; and started off for his own home. 686. The mighty Háđi laughed aloud, and the king left him and started on his journey. 687. He reached his palace, and cried "*Tuđu, Tuđu*" with a roar like a lion. The damsels were asleep but now awoke. 688. Without being struck, the gongs at the gate sounded; and without fire being applied, milk and rice began to boil. 689. In all the little *bańárs* the lamps began to blaze. The king began to float in a sea of delight.* 690. A swarm of bees flew up around his head. The king saw the delights of holy Vřindávana before his eyes. And all pregnant women gave birth to their offsprings.

THE QUEEN SPAKE.

THE BURDEN OF HER SONG.

691. "A pilgrim hath come, and standeth in my door. 692. Where is the maid-servant. I would first eat *pán*,† and then (would I enquire) whence the pilgrim hath come, and dismiss him." 693. The maid-servant made ready alms. 694. "Take alms, O reverend pilgrim, I am the maid of a householder, and would return within the house."

THE KING SPAKE.

695. "I am a pilgrim from the south: I call myself a Brahmáchári. I cannot take alms from the humble hands of a maid-servant. 696. If a lady give me alms, then this pilgrim's son can take it."

* Lit. coldness.

† See note to v. 373.

THE MAID-SERVANT SPAKE.

697. "Wait awhile, O pilgrim, thou who sittest and beggest shamelessly. Long will it be before thou obtainest alms, even though thou criest for them." 698. The maid-servant went weeping to the damsel. "He is a pilgrim from the south, and calleth himself Brahmáchari. 699. He taketh not alms from the hands of a maid-servant, but saith, 'Let the ladies give me alms.'" 700. When the two damsels heard this they took alms and arose. Behold, without a key the door opened of itself. 701. Aduná and Paduná went out with the alms. "Take alms, take alms, O reverend pilgrim. We are the daughters-in-law of a householder, and would return within the house."

THE KING SPAKE.

702. "I am a pilgrim from the east. My name is Brahmáchari. I cannot take alms from the hand of a woman. 703. If the umbrella* that shadeth thy head can give me alms, then can this pilgrim's son accept them." 704. The ladies pointed out the ring upon his finger. "We see a woman's ring upon thy hand. 705. Thou art the umbrella of my head. Thou art a pilgrim, and I am a pilgrim, pupils of one guru."

THE KING SPAKE.

706. "One evening I stopped at a house, and they gave to a man *ṭhákari kálái dāl* and *ású* rice. 707. He ate it greedily, and was attacked with cholera and died. 708. First one man took something† off his body, and then another; and as my share they gave me these two rings."

THE QUEEN SPAKE.

709. "Where is my maid-servant? First will she eat *pán*.‡ Then shall she cut the rope which ties the elephant. 710. If this be my husband, he will recognize him. If he be a pilgrim from the south, he will trample him to death." 711. She cut the elephant's rope, and the elephant came from a distance. 712. While yet afar off he made obeisance to the king. And when he approached, he lifted him on to his shoulder with his trunk. 713. The elephant awaited awhile and stood steady, that the damsels might approach. 714. The king descended from the back of the elephant, and the damsels took him by the hand and led him within the house. Amid laughter and jokes, they began to speak familiarly with him.

* *I. e.*, thy husband.

† So explained to me. It means literally, "First one gave a blow, and then another gave the last blow."

‡ See note to v. 373.

THE QUEEN SPAKE.

715. "How hath the Guru taught thee magic arts? Let us see how thou wilt approach thy mother." 716. He changed himself into a golden bee, and flew to his mother's palace. 717. He appeared in Mayaná's house, and, uttering a loud cry, made her spinning-wheel fly up into the air. 718. But Mayaná also was skilled in charms, and with a jump she seized the spinning-wheel by its head.

MAYANA' SPAKE.

719. "Come, come my son, the darling of an unhappy one." 720. The king divided his hair and fell at the feet of his mother. 721. He sent for Mathu the barber. He began to clear off his vow,* and the Bráhmans came, and collected materials for sacrifice. 722. The king began to perform the celebration of the office of *sankirttana* and gave away the contents of seven barns in charity. 723.† He himself crossed the Vaitarani on the tail of a cow, and his ancestors crossed (the river of life) into paradise. 724. Mayaná bathed herself with five *loṭas* of water, and laughing returned quickly‡ into the house. 725. After cooking a dish of rice and fifty different curries, she cleaned three (brass plates) with tamarind juice. 726. Mayaná summoned the Hádi with a loud voice, and he immediately came and stood before her. 727. The first plate she gave to the Hádi. The second she took herself, and the third she gave to the king. 728. After washing their hands and mouth, what did they do? They uttered the holy name of Kṛishṇa, and, beginning their meal, ate one, two, and five mouthfuls each. 729. After eating and drinking, their hearts were glad, and they washed their mouths with water from a golden vessel. 730. Then the Hádi, who came from paradise, placed his feet on the head of the king, and returned to his own place. 731. They cleaned the king's throne; and Hanumán took the staff and umbrella of royalty, and marched about; and the throne-elephant approached dressed in his trappings. 732. The king clothed himself magnificently, and the elephant mounted him on his shoulders by his trunk. 733. He took the king to the throne, accompanied by the music of drums and trumpets; and bowed himself down before it, and with his trunk placed him upon the seat. 734. Then the king immediately fixed the land revenue at one and a half scores of *kāorís*, (as it had been in old days) and ever since reigned happily within his kingdom.

* By cutting his nails and hair which he had allowed to grow.

† This is most essentially a "*Satya yuger kathá*." What does it mean?

‡ Lit. At a bound.

APPENDIX.

The following are the lines referred to in the note to verse 264. I give them as an example of the very peculiar nature of the dialect. It is difficult, and requires a very literal translation, which I give.

The word for "fresh butter" appears in two forms,—*ननि* and *नवनि*; and it is worth noting how the latter has remained almost unchanged from the time of the *Aitareya Bráhmaṇa*.*

झामर बांशीरे मन मज्जासुरे ।
 रया १ नयान झोरे ॥
 माय बखेरे बाहु उतारे ।
 नमिन पुष्पर पासक ।
 पेठे पार कत निन्द ॥
 मायर बचने बाहु उठिया बसिल ।
 भेलिते मा पारे बांछि बसिते जानिल ॥
 बाहु मेल बिजाने यमदा रल घरे ।
 रखिन† नवनि बाटे घरे १ ॥
 बिजान करिया घरे नानि माय ।
 उतम सिद्धम बसिते दिला माय ।
 खानन्दित दया बाहु चिर ननि छाय ॥
 चिर ननि छाया बाहु तुष्ट हलो मन ।
 उतम निहार अले करे आनवन‡ ॥

O the pipe of Syám (Kṛishṇa). My mind whirls, my eyes continually run with tears. The mother said "O Yádu, how art thou sleeping on the deep bed of flowers in the north?" Hearing the mother's voice, Yádu sat up; he could not open his eyes, and began to rub them. Yádu goes to bathe; Yasódá remains in the house, and divides out this rice-milk and fresh butter.

After finishing his bath, he goes towards the house—his mother gives him a grand throne to sit upon; being pleased, Yádu eats the milk, and the fresh butter.

After eating the milk and fresh butter, Yádu's mind becomes satisfied; and he washes his mouth with water in a grand golden pot.

* Ait. Br. I. 3. नवनीतेनाभ्यक्षन्ति ॥

† रखिन = र चिर ॥ ‡ आनवन = आनमन ॥



The Lokanīti translated from the Burmese Paraphrase.—By LIEUT. R. C. TEMPLE, B. S. C., *Offg. Wing Officer, 1st Goorkhas.*

INTRODUCTION.

There is probably no book so universally known to the Burmese as the Lokanīti, pronounced in Burmese Lawkanīdi. It is read in all schools of any standing whether they belong to the Government or to enterprising Hpongyis or Priests. It has been copied into hundreds of palm-leaf MSS with more or less accuracy according to the learning of the various scribes, and about five years ago the Roman Catholic Missionaries published it at Bassein in Burmese and Pāli, and soon afterwards the Government itself published an edition of it in Burmese and Pāli in an issue of 10,000 copies. The book is as its title signifies a collection of Proverbs or Maxims on subjects of every day life, and as it now stands, is not I think of any great antiquity. It has a semi-religious character which it bears in common with many Buddhist works of a similar nature, and seems to belong to a series of books of Proverbs, though of very different dates to it, which are known respectively to the Burmese as the Dammanīdi, Yāzanīdi, and Lawkanīdi, i. e., Books of Proverbs concerning the Law and Religion ("the Law" having much the same signification to a Buddhist as it had to the Jews of the Bible), the King and Common Life. These titles are in Pāli respectively Dhammanīti, Rājanīti and Lokanīti.

I was never able in Burmah to find out much about the history of this book which is professedly merely a collection of passages from older religious works, although I have personally and through the kindness of several friends made many enquiries from the Burmese Sayās or learned men. According to one account, it was written originally (date unknown) in Sanskrit (? Pāli) by the Pōngnā (Brahman) Sānnēkgyaw (Burmese name) and paraphrased into Burmese in 1196 Burmese Era (= 1826 A. D.) by the Hpōngyi U Pōk of the Mahā Oung Myē Bōng Sān Ok Kyoung (the Great Brickbuilt Monastery in the Sacred Place) at Ava. This U Pōk's name as priest was Sēk-kān-da-bī, to which the king of Ava added the titles of Thiri Thāddamma-daza, Mahā Damma-yāza Guru, (= Sanskrit, Sri Saddharmadhaja, Mahā Dharmarāja Guru) or the True Teacher of the Law, the Great High Priest, Master of the Law. Again one of my correspondents writes that the author was a priest "with no very extraordinary knowledge of Pāli" who either collected the maxims from old books or what is more probable collected some of them and added others of his own composition. This opinion is corroborated by the unequal merit of the original Pāli verses, and by the many grammatical and other errors observa-

ble in them even upon a superficial examination. Lastly in one of the MSS. in the Bassein District there is a preface partly in Burmese and partly in Pāli, according to the usual custom, which was forwarded to me. This contains much the same information as the account above given, and is almost identical with what is given as the last or 165th sloka of the Government printed edition of the Lawkanīdi, a rendering of which will be found at the end of the following translation of the whole work. From these sources of information it is difficult to tell whether the book was compiled or only revised by the Hpōngyī Sēkkāndabī, but I think the latter is probably the correct assumption.

The Lokanīti is divided into seven khandas or chapters, each containing a series of proverbs on the subject of the chapters. These subjects are (1) the Wise, (2) the Good, (3) the Wicked and Foolish, (4) Friendship, (5) Women, (6) Kings, (7) Miscellaneous Subjects. In the first of these chapters, and in fact throughout the whole work, there is a strong religious element, but they contain at the same time many spicy bits of shrewd worldly wisdom, while the quaintness of the similes with which the proverbs abound should I think of themselves attract attention.

In reading the rendering of this book it must be borne in mind that it is a Buddhist work, and that such words and expressions as "the truth," "the Law," "God," "angels," "the world to come" and so on, have a Buddhist and not a Christian signification. However, it bears so strong a resemblance to our own "Proverbs of Solomon, the son of David, King of Israel," that I thought it advisable to translate it into Biblical language, deeming that the Buddhist mode of religious thought would be more forcibly brought before English readers by that than by any other mode.

Lastly, when making the following translation in 1875, I had the assistance of Mounḡ Shwē Thā, a well-known "Munshi" of Rangoon.

THE BOOK OF THE PROVERBS OF COMMON LIFE.

*Glory be to him that is blessed, that is holy, that is the Author of all Truth.**

CHAPTER I.

1. Making my obeisance to God,† the Law, and the Assembly of the Perfect,‡ I have written in one book, called the Book of the Proverbs of

* This is the usual heading of Buddhist books. In Pāli it runs as follows: "Namo tassa bhagavato arahato sammā Sambuddhassa."

† Or Buddha or the All Wise.

‡ Or to the Three Precious Things. The "Three Precious Things" are (in Pāli) Buddha, Dhamma and Sangha, which are translated by Childers in his *Khuddaka Pāṭha* as Buddha, the Law, and the Church.

Common Life, many things from out of many holy books ; which things I have briefly set forth in the language of the Scriptures.*

2. The Book of Proverbs that speaketh of divers matters is unto man as an heart ;† as father and mother, as a teacher, as a friend ; therefore he that knoweth this book is as one that hath seen and heard much and becometh excellent and wise.

3. He that is idle from whence shall he obtain knowledge ? He that is without knowledge, from whence shall he obtain riches ? He that is without riches, from whence shall he obtain friends ? He that is without friends, from whence shall he obtain happiness ? He that is without happiness, how shall he do well ? He that hath not done well, how shall he attain unto the perfect state ?‡

4. There is no wealth like unto knowledge, for thieves cannot steal it : in this world knowledge is a friend and leadeth unto happiness in the world to come.§

5. Think not the wisdom that seeth and heareth a little thing, and ponder this in thy mind. It is a drop of water that falling often times on an ant-hill filleth it.||

6. Think it not a small thing to be learned in thy books or with thy hands : if thou learn well but one of these only thou canst live.

7. Not every mountain hath precious stones ; not every elephant hath a charm ;¶ not every forest hath the sandal-wood ; not every place hath a wise man.**

8. Surely he that is searching after knowledge should go with much yearning to the place where he heareth the wise man is that is filled with knowledge.

9. By degrees wisdom is learnt : by degrees riches are gotten : by

* Or Pali Language or Magadhi Language. The Pali language is literally "the language of the Scriptures." The following is from Childers' account of the Pali language—"The true or geographical name of the Pali language is *Māgadhi*, 'Magadheese language', or *Magadhabhāsā*, language of the Magadha people." The word *pāli* in Sanskrit means "line, row, series" and by the South Buddhists is extended to mean the series of books which form the text of the Buddhist Scriptures. Thence it comes to mean the text of the Scriptures as opposed to the commentaries, and at last any text or even portion of a text of either Scriptures or commentaries. *Pālibhāsā* therefore means "*the language of the texts*," which is of course equivalent to saying "*Māgadhi language*." Childers' Pali Dict. Preface, footnote.

† Or solid thing, or pith, or core, or best part.

‡ Or the night of perfect rest, or *nirvāna*, or *nāgān*.

§ Or life to follow.

|| Or hill of white ants.

¶ Or charm against danger.

** Or a wise man of great fame, or a wise man of the Council of the King.

degrees he climbeth that climbeth a mountain : by degrees desire is appeased : by degrees anger cometh : by degrees are these five things.

10. The knowledge of seeing and hearing : the knowledge of the statutes* : the knowledge of reckoning : the knowledge of carpentry : the knowledge of the Books of Proverbs : the knowledge of healing by charms : the knowledge of music : the knowledge of throwing : the knowledge of shooting with the bow : the knowledge of the ancient writings : † the knowledge of medicine : the knowledge of jesting : the knowledge of the stars : ‡ the knowledge of juggling : the knowledge of the Book of Words : § the knowledge of the arts of messengers : the knowledge of the ways of speech : || the knowledge of charms : these are the eighteen kinds of knowledge.

11. In the world if none asketh aught of the wise man he is like a drum that is not beaten ; if any asketh aught of him then his wisdom floweth forth as the rain : but the ignorant man whether any asketh aught or asketh not alway talketh much.

12. In the world the knowledge that is only in the books, ¶ or the riches in the hand of another, when thou hast cause to use them, then the knowledge that is only in the books thou canst not call knowledge nor the riches in the hand of another riches.

13. In the world by the stalk of the water-lily thou shouldest know the water whether it be deep or shallow : by his deeds and the manner of his speech thou shouldest know a man whether he be base-born or of high birth : by his words thou shouldest know a man whether he be wise or a fool : by the green herb and the parched thou shouldest know the land whether it be rich or poor.

14. In the world he that hath a little knowledge thinketh that little knowledge much and is proud : wherefore is it thus ? A young frog that hath not seen the sea thinketh the well wherein he dwelleth to be a great water.

15. In the world if a man gather not knowledge in his first age : if he gather not riches in his second age : if he keep not the law in his third age : how shall he begin these things in his fourth age ?

16. My beloved children, learn knowledge and wisdom : wherefore are ye idle ? My beloved children, learn knowledge and wisdom every day. He that hath not knowledge and wisdom becometh the servant of another and rightly unto him that hath knowledge and wisdom is homage paid in the world.

17. In the world the mother is an enemy to her children, likewise the father is an enemy to his children ; wherefore is it so ? In the time of their

* Dammathât.

§ Or Sanchân.

† Or Purânas.

|| Or Thâdda.

‡ Or Vedas.

¶ Or on the palm-leaves.

youth they make them not to learn knowledge : therefore their place is not in the midst of the assembly, as the place of the bittern* is not in the midst of the wild-duck. Because they make them not to learn knowledge are they called their enemies.

18. Doth any sharpen the thorn that groweth in the valley ? my son,† it becometh sharp of itself. My son,† hath any given his keen eyes to the deer ? my son,† they are keen of themselves. Doth any give the sweet smell to the lily that is in the mud ? My son,† the smell is sweet of itself. Doth any teach his good manners to the child of high birth ? My son,† he must teach them to himself.

19. The betel-nut that is without lime hath an ill-savour : he that hath not riches hath an ill-savour when he putteth him on ornaments : that which is eaten without salt hath an ill-savour : he that hath not knowledge hath an ill-savour when he writeth a book.‡

20. He that listeneth and marketh carefully with his might becometh filled full of knowledge. By learning knowledge increaseth : from the knowledge that is learnt cometh understanding.§ He that hath understanding of that he should know hath happiness ever with him.||

21. In the world both unto the ox and to the man is the appetite and lust and sleep, but learning is unto the man alone ; wherefore if thou fall short of learning thou becomest as the ox.

22. In the world there is no friend like knowledge : there is no enemy like disease : there is no lover like unto thyself : there is no strength like unto fate.

23. In the world the place of the duck is not in the midst of the crows : neither is the place of the lion in the midst of the oxen ; neither the place of the horse in the midst of the asses : nor the place of the wise man in the midst of fools.

24. Surely though the ignorant man sit at the feet of the wise all his days he knoweth not the law : wherefore is it so ? It is even as the ladle knoweth not the taste of the pottage.

25. Surely he that is wise if he sit at the feet of the wise even for a moment, quickly will he know the law : wherefore is it so ? It is even as the tongue knoweth the taste of the pottage.

26. The strong man goeth not to the battle if he be not armed ; likewise the wise man speaketh not but according to the scriptures ; even as the merchant that goeth on a journey afar goeth not without companions ; nor journeyeth any anywhither by himself.¶

27. In the world, if he lose his wealth, if there be sorrow in his mind,

* Or paddy-bird.

§ Or the meanings are known.

† Or Sir, or my masters.

|| Or beareth happiness.

‡ Or sacred verse.

¶ Or without companions.

if there be evil in his house, if any deceive him, if any mock him ; the wise man telleth not of these things.

28. In the world he that knoweth what he should say whatsoever happeneth ; that knoweth whom he should love ; that knoweth how to be angry : the same is called a wise man.

29. He that would eat of good things without money ; he that would fight without strength ; he that would dispute without knowledge : these are like unto madmen.

30. Going often times unto the house of another, not being called ; disputing often times with another, not being questioned ; being proud of his own conceit : these three things are a sign of the mean man.

31. He that is not comely babbleth much : so he that hath a little wisdom showeth it publicly : so the pot that is not filled with water troubleth the water :* so the cow that giveth not milk kicketh.

32. The young frog when he sitteth him down† thinketh, Now am I a lion, but when the crow snatcheth him up he coaxeth him saying, Friend, friend : likewise the fool that hath no wisdom thinketh himself wise, but when the wise man asketh him a question, then he speaketh unto him kindly saying, My lord, my lord.

33. Because the young frog sitteth in the like manner, shalt thou say, It is a lion ? because the pig grunteth in the like manner shalt thou say, It is a leopard ? because the cat hath the like colour and form shalt thou say, It is a tiger ? because their form appeareth the same in thine eyes shalt thou say, All wise men are equal in knowledge ?

34. No ruler is satisfied with his wealth ; so also is no wise man satisfied with the good word : as the eye is not surfeited by looking on the beloved, nor the sea surfeited with water.

35. It is not right that he fail in wisdom and learning that hath come to a full age, if he be of them that are noble. It is even as the acacia flower‡ that hath no smell.

36. In the world though a man be base-born he becometh a minister of the king ; though a man be a fool's son he becometh wise ; though a man be the son of him that hath no riches his wealth becometh abundant : therefore be ye not scoffers of men.

37. Whoso learneth much by his yearning after knowledge cannot interpret that which he hath learnt, as the dumb cannot tell that which he hath seen in his dreams.

38. The potter striketh not the pot to break it, but that it may be-

* Or troubleth the water by shaking.

† Or sitteth on his haunches as a lion.

‡ Or agati flower or the beautiful acacia flower.

come goodly ; so the teacher beateth not the scholar to make him miserable, but that he may increase in knowledge and wisdom he beateth him.

39. If any bind the flower of the periwinkle tree in the leaf of the butea tree, then to him it is not the flower of the periwinkle tree only that hath a sweet smell, for the leaf of the butea tree likewise smelleth sweetly : therefore it behoveth to follow both the wise man and them that cleave to him. Here endeth the book concerning them that are wise.

CHAPTER II.

1. Be ye companions with the righteous and keep ye company with the upright : the upright man knowing the law of the just cometh excellent and is not wicked.

2. Forsake the company of the wicked, but cleave unto the righteous for he is worthy of companionship. Work righteousness day and night, remembering alway that all things change continually.*

3. The fruit of the water fig tree when it is ripe without is red, but within it is altogether full of flies : as it is with these so is it with the heart of the wicked.

4. The fruit of the jaca† tree when it is ripe without seemeth covered with thorns, but within it is full of sweetness : as it is with these even so is it with the heart of the righteous.

5. In the world the sandal-wood though it be dead‡ loseth not the sweet smell ; neither loseth the elephant his comeliness in the eyes of men on the place of battle ; nor the sugar-cane his sweetness in the mill : even so he that is wise and good forsaketh not the law though he become poor and wretched.

6. That which is called a lion though he be an-hungred eateth not of any green thing ; that which is called a lion though he become lean eateth not of the flesh of the elephant : for being noble he keepeth the law of the noble.§ So he that is born noble though he become poor doeth not that which is not noble.

7. In the world the sandal-wood|| is sweet, and sweeter than the sandal-wood is the moon ; but sweeter than sandal-wood and moon is the righteous word of a righteous man.

8. Let not the words of the righteous transgress even for a moment, saying, Behold ! the sun that hath rays innumerable riseth in the West : Myinmo¶ boweth his head : or the fires of hell are cold, or the lily floweth on the mountain-top.

* Or that the state of life changeth continually.

† Or jack-fruit tree.

‡ Or dried up.

§ Or guardeth his nobility.

|| Or almug tree.

¶ Or Mount Myin-mo or Mount Meru.

9. The cool shade of a tree is sweet; and sweeter than the shadow of the tree is the shadow of thy family, thy father and thy mother; and sweeter than this is the shadow of the learned; and sweeter yet than this, is the shadow of the king: but very much more sweet is the sweetness of the law, that is called the shadow of the good God.

10. As the humble-bee desireth the flower, so loveth the righteous to be of good report: as the fly hankereth after all manner of rottenness, so longeth the wicked man after sin.

11. He that hath a wicked mother speaketh wickedness, and the son of a wicked father worketh wickedness: but if his father and his mother be both of them wicked, then both that which he saith and that which he doth becometh evil.

12. He that hath an excellent mother speaketh righteously, and the son of a good father worketh righteousness: if his father and his mother be both of them good then all that he saith and all that he doth becometh excellent.

13. There is need of the brave man in the place of battle: there is need of the skilful word in the time of wrath: the friend is wanted in the time of eating: or if there be any trouble before thee, then there is need of the wise man.

14. When one dog seeth another he showeth his teeth that he may oppress him: in the like manner when the wicked man seeth one that is righteous he vexeth him that he may cause him hurt.

15. In the beginning the foolish man of himself doeth not that which he hath to do, neither maketh he another man to do it: then doeth it carelessly in haste and sorroweth afterward.

16. In the world he that turneth away wrath is not troubled even for a little, and God, beside other good men, praiseth him that is grateful. It behoveth every one to be patient of the angry word, and him that is thus patient God, beside other good men, praiseth, saying, Behold! this man is good.

17. In the world he is miserable that must live in a narrow place full of uncleanness; and more miserable than he is he that must live among his enemies that love him not; but yet more than he is he miserable that must live amid the ungrateful.

18. Teach them continually that thou shouldest teach, and keep them away from evil-doing. Is not this the good word? Let him that is instructed love the upright man that instructeth him, but let him not love the unjust man that is wicked.

19. Honour him that is greater than thou and thou shalt be rewarded: keep thou the brave separate one from the other and thou shalt conquer: make thou a little present to him that is lesser than thou and thou

shalt win him : be thou diligent and thou shalt overcome him that is thine equal.

20. In the world not every one telleth of the poison, saying, This is poison ; but of the goods of the priest they tell, saying, Truly this is poison : for the poison slayeth but once, but as for the goods of the priest they kill for ever.

21. By his swiftness is known the goodness of the horse : by the weight of his burden the goodness of the ox : by the much milk she giveth the goodness of the cow : and the wisdom of the wise man by the wisdom of his speech.

22. The riches of the just though they be little are like unto the water that is in the well, for they are a place of refuge unto all : but the riches of the unjust though they be great are like unto the waters of the sea, for in them is no place of refuge neither for them that bathe nor for them that drink.

23. The rivers drink not of their own water, neither eat the trees of their own fruit, nor fall the rains in every place : likewise are the riches of the just man only for an help unto others.

24. Desire ye not that which ye should not desire, neither think ye that which ye should not think ; but meditate ye carefully on the things that are,* loving not to make your time profitless.

25. Without endeavour it cometh and with endeavour it cometh not. Is not this word true ? For the possession of riches cometh neither unto man nor unto woman according to their endeavour.

26. Whosoever loveth the wicked : whosoever loveth not the righteous : whosoever loveth only the law of the unjust : by these things shall he be destroyed. Thus shall it be with him. Here endeth the book concerning them that are good.

CHAPTER III.

1. Love not the wicked man greatly : it is as the pot thou bearest on thy head that is not full of water and maketh a noise.

2. The snake hath an evil temper and likewise hath the wicked man an evil temper, but the temper of the wicked man is more evil than the temper of the snake ; for the temper of the snake is quieted by the charm, but how shall ye cure the temper of the wicked man ?

3. When the foolish man knoweth his own foolishness, then, though he be foolish, shall he be called wise ; but when the foolish man thinketh himself to be wise though he be still foolish, then shall they say of him, Verily this is a fool.

* Or of nature.

4. Whatsoever evil the foolish man doeth, it profiteth him not; and though he thinketh it to be even as honey, whensoever his evil deed prospereth then doth misery fall upon him.

5. The foolish man when he hath strength in his body becometh wicked and striveth after the goods of another by force: the foolish man that hath little wisdom when his body is destroyed goeth down into hell.

6. In the house it is the rat that maketh mischief: in the forest it is the monkey: among the birds it is the crow, and among men it is the teacher of false doctrines.*

7. The night seemeth long to the wakeful man: the way seemeth long unto him that journeyeth: likewise his life seemeth long to the foolish man that knoweth not the righteous law.

8. The man that hath an evil mind seeth the fault of another though it be only as a sesamum seed: but though his own fault be as a cocoanut, he seeth it not.

9. If thou wouldest be wise show not thy fault unto another, but strive to learn his fault. Wherefore should this be so? Hide thy faults as the turtle draweth in his head and his members, but mark well the faults of others.

10. When the foolish man praiseth the wise, it is called chiding, but if the wise man praiseth the wise, then is it called praise indeed.

11. Make a present and thou shalt win the covetous: bow down before him and thou shalt win the haughty: follow after him† and thou shalt win the foolish: speak the truth and thou shalt win the wise. Here endeth the book concerning them that are wicked and foolish.

CHAPTER IV.

1. If a stranger work for thine advantage then is he as thy brother, and if thy brother work not for thine advantage then is he as a stranger: so the sickness that is part of thee‡ is not for thy profit, but the medicine that cometh from the desert§ profiteth thee greatly.

2. He that speaketh slightingly behind thy back, but speaketh kindly to thy face; shun thou him as a friend that hath such an heart, as the bee avoideth the poison that is in the pot.

3. If thy riches decrease thy friends cast thee off; likewise desert thee thy wife, thy children, and thy brethren; only will they shelter them under thy riches: wherefore in the world thy greatest friend is thy wealth.

4. In the world thou canst only know thy servant if he be good or bad when thou usest him: so only canst thou know thy brethren in the

* Or Pōngnā or the Brahmin.

† Or obey his will.

‡ Or within thy body.

§ Or forest.

time of danger : so canst thou know thy friends when thy riches are few : so canst thou know thy wife when thy wealth is fled.

5. Whosoever increaseth thy prosperity call him thy friend : whosoever giveth thee food call him thy father and thy brother : whosoever loveth thee him also call thy friend : and whosoever being happy maketh thee happy call thy wife.

6. Make not a great friend of thine enemy, neither make close acquaintance with thy friend, for when they are angry they will discover thy faults.

7. Whosoever hath once quarrelled with his friend if he wish to be one with him again, he must pursue him unto death,* as the mare doth that is with young.

8. So long as thy desire be not fulfilled bear thine enemy on thy shoulder : but when the time of the fulfilment of thy desire cometh, then destroy thou him as thou wouldest break the pot thou carriest against the rock.

9. That which remains of thy debt : that which remains of the fire : those also that remain of thine enemies often times increase again : therefore leave thou none remaining.

10. Whosoever hath a face as fair as the water-lily : whose speech is sweet as the sandal-wood, and whose mind is as the poison that slayeth quickly : put not thy trust in such an one.

11. Trust not the master that is rough : still less put thy trust in the master that is quick to anger : still less in him that praiseth not : still less in him that is an oppressor.

12. Keep the thing that is horned fifty cubits from thee : keep the horse one hundred cubits from thee : keep the elephant that hath tusks one thousand cubits from thee : keep the bad man from thee altogether.

13. An evil abode ; a wicked husband ; a wicked people ; a wicked friend ; a wicked wife ; a bad servant : these must be kept afar off.

14. Whatsoever friend cometh forward when thou art oppressed with sickness ; when thou art an-hungred ; when thou lovest thy wealth ; when thou art in the hands of thine enemy ; when thou art before the king ; when thou art in the place of sepulture : only such a friend canst thou call a friend indeed.

15. Whosoever speaketh fair words hath many friends, but the harsh man hath but few. Seest thou not here the parable of the sun and the moon ? Here endeth the book concerning friendship.

* Or the kingdom of death.

CHAPTER V.

1. The beauty of the black cuckoo is his voice : the beauty of a woman is her love for her husband : the beauty of the uncomely is their knowledge, and the beauty of the priest is his long-suffering.

2. The wealth of a woman lieth in her beauty : of a man in his knowledge : of a priest in his well-doing : of a king in the strength of his armies.

3. A priest is comely if he be lean, as a four-footed beast is comely when he is fat : so a man becometh comely when he is wise and a woman when she hath an husband.

4. Be the harper never so good, if he play not on the harp for five days only his skill is fled ; be the archer never so skilful if he shoot not with the bow for seven days his cunning deserteth him : so the honour of a wife if she be a month separate from her husband is destroyed, and the disciple is lost if he be but half a month from his master.

5. The buffalo rejoiceth when he is in the mud, and the red duck when he is in the lake : so the woman rejoiceth when she hath an husband, and the priest when he doth according to the law.

6. Thou mayest praise the corn* after thou hast eaten of it, so thou mayest praise thy wife when she is become old : so likewise thou mayest praise the army when it returneth home after the enemy is conquered, and thy grain after thou hast stored it in thy barns.

7. The woman that hath been put away from two or three husbands ; the scholar that hath learned in two or three schools ; and the bird that hath escaped twice or thrice from the net knoweth well the way thereof.

8. Tame the wicked by beating : tame the bad husband by firm words : tame the bad wife by keeping away the money from her, and the greedy man by making him an-hungered.

9. The night that hath no moon is not good to look upon ; nor the sea that hath no waves ; nor the lake that is without wild-ducks ; nor the damsel that is without an husband.

10. It is the husband that should bring the riches, and it is the wife that should keep them. Is not this saying true ? For it is the man that should be the leader of the woman† as the needle is of the thread.

11. Every river is crooked : every forest is full of fire-wood : every woman when she is in a quiet place doeth evil.

12. The woman that is a disputer ; that is envious and a backbiter ; that is covetous of whatsoever she seeth ; that cooketh much and eateth of it ; that eateth before her husband ; that goeth abroad to other's houses :

* Or the rice.

† Or be the beginner or the original cause.

her husband should put her away though she hath borne him an hundred children.

13. The woman that delighteth in her husband when he eateth and when he adorneth himself, and as a mother correcteth that which is wrong ; that is much ashamed as a sister when she seeth that which is not decent or that which should be hidden ; that is respectful as a slave before her husband when he hath business ; that obtaineth a companion to consult in the time of trouble ; that giveth joy in the hour of sleep ; that is clever to make herself comely ; that is patient in the time of anger : that woman he that is wise calleth excellent, and when she is dead she is counted among the angels.*

14. The maiden whose flesh is as the colour of gold ; that hath eyes black as the hart's ; whose waist is small and whose loins are broad ; whose leg tapereth as an elephant's trunk ; whose hair untied curleth at the tips ; whose teeth are level ; that hath a deep navel ; that is pleasing in her carriage† : thou shouldst wed such an one even if she be of low birth.

15. The eighth month‡ is the most excellent among the seasons ; so the most beautiful is the best among women ; even so the eldest is the most excellent among sons and the North among the four quarters.

16. The woman that in each life§ desireth steadfastly to become a man must bear herself towards her husband respectfully, even as the wife of the chief of the Spirits|| beareth herself respectfully to him.

17. Whatsoever man in each life¶ desireth steadfastly to become a man goeth not near the wife of another, as he that would wash his feet shunneth the mud.

18. If he that hath become old take to wife a young girl, whose breasts are small as the fruit of the fig-tree, not being able to deal with her according to her desire, then she doeth him an injury.** Believe her not if she saith she knoweth her old husband only : wherefore being wedded to a young wife he shall come to ruin by reason of her. Here endeth the book concerning women.

* Or goeth to the country of the spirits or of the Nàts.

† Or habits.

‡ Or November.

§ Or in each state of life.

|| Or Nàts.

¶ Or in each state of life.

** Or speaketh evil of him behind his back.

CHAPTER VI.

1. A king sleepeth but one watch of the night : a wise man sleepeth but two : but he that is wedded sleepeth for three and the beggar sleepeth all night.*

2. In whatsoever place there is none that is rich ; no wise man that seeth and heareth much ; no king ; no river ; and likewise none to heal : in the place where are not these five remain not even for a day.

3. In whatsoever place there is none to love, none to desire, none that is friendly, none to teach wisdom and learning : remain not in that place even for a day.

4. In the world the house is desolate wherein are no children and the kingdom desolate that hath no king : so the mouth of him that hath no wisdom is dumb† and all is desolation to him that is poor.

5. In the world he that would be rich becometh a trader : he that would be learned serveth him that is wise : he that would have sons marryeth a young wife : and he that would be a ruler doeth the desire of the king.

6. The priest that is not content cometh to ruin, as a lord of the world, if he be satisfied, cometh to destruction : so an harlot is ruined if she become modest, or she that is pure if she lose her modesty.

7. The strength of a bird is as the heavens : the strength of a fish is as the sea : even as the strength of a king is as a weak man and the strength of a child is a cry.

8. Long-suffering, wakefulness, industry, almsgiving, mercy, prudence : these six things are the glory of kings, of rulers, and of parents. This is the glory they desire that are good.

9. In the world kings command but once ; priests and teachers‡ speak but once ; prophets§ teach but once : and after their manner doeth|| the good man that is worthy to be loved.

10. In the world the idle man is evil if he be married, so is the priest evil if he keep no guard over his body or his mouth or his heart : likewise is the king evil that doeth aught without thinking of it, and the wise man that is wrathful if his wrath escape him.

11. In whatsoever place there are many great men¶ each desiring to be called a wise man and longing to be the chief of all : the work of those men cometh to nought.

* Or for four watches.

† Or quiet or desolate.

‡ Or Brahmans or Pongnas.

§ Or saints or gods and the holy.

|| Or followeth their teaching or doeth the law of their meaning.

¶ Or chiefs.

12. Every king should of himself know his revenues whether they be less or more, and his provisions if they be enough or not : of himself he should know his servants if they do not their business ; that he that is worthy of disgrace may be disgraced, and he that is worthy of greatness may be made greater.

13. In the world turn thy back toward the sun and thy belly to the fire, pay respect with thy whole body to the great man,* and by wisdom find a way to the world to come.†

14. In the world touch neither fire, nor water, nor a woman, nor a fool, nor a snake, nor a prince, but pass them by or instantly they will take away thy life.

15. In the world if any hath a bad wife, hath rude servants and evil-minded, hath a snake in his house : verily he shall die.

16. In the world by teaching wisdom to him that is very foolish, by living with a very wicked wife, by keeping company with the unjust shalt thou become less even though thou art a wise man.

17. In the world if the son do an evil deed thou sayest, His mother doeth it : likewise if the disciple work evil thou sayest, The master doeth it : so if the people do wrong thou shalt say, It is the king that hath done this ; and if the king himself do evil then shalt thou say, This is the work of the High Priest.‡

18. By his kindness§ a king should conquer him that is wrathful and proud, and him that is dishonest by his honesty : even as he overcometh the sour man by a present and by his truthfulness the liar.

19. In the world the rude man is tamed by a gift and by a gift cometh every good thing ; for he that bringeth gifts and fair words gaineth respect from another because he payeth it.

20. Gifts and offerings bring|| love in the world, as a sour mind bringeth¶ hate : so also gifts and offerings bring|| many followers even as a sour mind bringeth¶ loneliness.

21. In the world thou canst conquer the enemy thou desirest to conquer, if he use not his advantage when it is great, for then thou becomest his equal : it is as thou makest a rope of grass and with it bindest an elephant.

22. A king that hath his fill of armies, if he be not able to conquer

* Or lord or master.

† Or offer respectfully thy back to the sun, thy belly to the fire, thy whole body to the great man, and thy wisdom to the world to come.

‡ Or the Parohit or Chief Brahman.

§ Or without anger.

|| Or are the medicine or charm for.

¶ Or is the medicine or charm for.

his enemies, what profiteth him his power ? It is as a fire, that is kindled in a place where is no wind, that burneth not.

23. None gratifieth his lust as a king, so none taketh either his form, or his speech, or his ornaments,* or his clothing or his jewels or anything that is his.

24. The king is not my kinsman† ; the king is not my wife's brother‡ ; the king is my master§ : keep these alway in thy mind.

25. When thou waitest on the king stand not afar off ; neither approach very close ; nor go between him and the wind ; nor keep in front of him ; nor look from a place lower than he, nor yet from one that is higher : these six things thou shalt not do : keep thyself from these as thou guardest thyself from fire.

26. Be thy glory as the glory of the God that knoweth all things, if thou obtain not the favour of the king,|| it becometh thee not : for it becometh the ruby that is of great price to be set in gold.¶ Here endeth the book concerning kings.

CHAPTER VII.

1. How shall the priest do his duty that keepeth close acquaintance with a woman ? or how shall he have a tender heart that eateth much of flesh ? How shall he speak true words that drinketh strong drink ? or he know shame that hath strong desire ? How shall he obtain knowledge that is very idle ? or he gather riches that grovelleth ?

2. He that is a drunkard ; that goeth abroad at wrong times ; that goeth often times unto feasts ; that is a gambler ; that hath evil friends ; that is an idler : he that doth these things cometh to destruction by reason of them.

3. In the day time speak not without looking first, and in the night time without asking first, but bear thyself as the hunter that is fearful of danger and looketh to and fro in the forest.

4. The prophet** Byasa saith of five kinds of men that they are dead while yet alive : these are they that are poor, that are sick, that are ignorant, that are debtors, that are about the king.

* Or his flowers and sweet smelling things.

† Or spouse.

‡ Or sister's husband.

§ Or lord.

|| Or the refuge that is called the king.

¶ Or the ruby of great price if it be set in gold becometh goodly.

** Or teacher.

5. It is the wisdom* of the wise man that he seeth danger ere yet it cometh and avoideth it from afar, neither is he afraid when he seeth that it hath already fallen on him.

6. In the world he that sleepeth over much, that is forgetful, that taketh his ease, that hath much sickness, that is lazy, that is strong in his lusts,† that is eager for whatsoever is new: these seven know not the Scriptures.‡

7. Go to the poor, thou gift: for he that hath many gifts is surfeited. Go unto the valley, thou Angel of the Rain; for the sea is surfeited with water. Such is not the law, but the deed is thine own.§

8. In the world when any hath finished that he hath to do he regardeth it no more||: therefore when thou hast aught to do, leave undone a remainder thereof.

9. In the world cotton is light, but lighter¶ is he that is wanton, and lighter still is he that hearkeneth not unto his parents and his teachers, and lighter yet than all is he that heedeth not the word of the excellent God.

10. In the world the sunshade** that is of stone is of worth,†† and of greater worth‡‡ is it to hearken to the Angels, and greater still is the worth§§ of the instructions of thy teachers and parents, but the word of the excellent God is the most worthy§§ of all.

11. In the world thy right hand is called the slave of the body and his little finger the slave of the ear and the nose and the eyes, but the left hand is called the slave of the feet.

12. The angel||| Kuwera dwelleth in the midst of the betel-leaf: at the bottom thereof there dwelleth a spirit¶¶ and at the top thereof there dwelleth a devil.*** Wherefore when thou eatest of it, cut off the top and the bottom thereof, and thou shalt be of good repute.

13. An angel of high degree††† guardeth the tablets; an angel of

* Or nature.

† Or hath great desires.

‡ Or the books.

§ Or this is not the law of nature, but the deed is the original cause.

|| Or careth no more for it.

¶ Or more worthless.

** Or *Attie* or umbrella.

†† Or heavy.

‡‡ Or heavier.

§§ Or heaviest.

||| Or *nât* or spirit.

¶¶ Or *belu* or sprite or *yakkha*.

*** Or he that is evil.

††† Or a *Brahma*.

lesser degree* guardeth the bindings† thereof; therefore it behoveth him that learneth knowledge to propitiate the angels both of the higher and lower degree,‡ for they love him that doth this.

14. According as the ox cherisheth man and bringeth him wealth, so let him love him as a parent and respect him.

15. Whosoever eateth of the flesh of the ox the same is called the devourer of his own mother's flesh: if an ox die it is meet that he be given to the birds of the air§ or unto the waters.||

16. He that learneth on the fifth day of the week will be complete in knowledge: he that learneth on the first or sixth day will leave undone a part thereof: he that learneth on the second or fourth day will obtain none of it¶: and he that learneth on the third or last day of the week will die.

17. There is that sayeth that he that learneth knowledge on the eighth day of the waxing or the waning moon killeth the teacher, and that he that teacheth knowledge on the fourteenth day of the waxing or the waning moon killeth the scholar: also there is that sayeth that if knowledge be taught on the tenth day of the waxing or the waning moon it will be destroyed, and that if it be taught to any at the full moon his parents will be slain.

18. In the world he that learneth knowledge eateth not of the cocoanut on the seventh day of the waxing and the waning moon: on the ninth day also he eateth not of the gourd, neither of the kenbeng on the twelfth day, nor on the third day of the divers kinds of curries: if he eat of these his knowledge will be lost.

19. In the world a man is renounced for the profit of his family: a family for the profit of the village: a village for the profit of the city: and the whole world for the profit of a man.**

20. In the world the lion, the good man and the elephant, these leave the place that is not for their advantage and go their way; but the crow, the bad man, and the deer, these come to destruction in the place where they find delight.

21. In whatsoever place there is none to love and none to desire, there is no friend and none to teach: tarry thou not there.

22. The wise man goeth to the new place with a watchful mind as one that goeth forward, and remaineth in the old place with a constant

* Or a Pisana.

† Or bag.

‡ Or both the Brahmas and the Pisanas.

§ Or the Vultures.

|| Or that he float on the water.

¶ Or be of a calm mind.

** Or self.

mind as one that standeth still : wherefore leave not quickly the old place without trying the new.

23. A woman when she eateth eateth twice as much as a man, but her wisdom is four times greater than his, and her lust eight times greater.

24. In the world the taste of the sugarcane becometh sweeter according as the joint is further from the top ; so the excellent man that is a good husband becometh sweeter from the beginning even unto the end, as doth the sugarcane : likewise also the evil friend by degrees loseth his sweetness, as doth the sugarcane when thou eatest thereof from the bottom to the top.

25. If the country be filled full of husbandmen and of merchants and of noblemen and of priests of good repute, then shall the borders be increased.

26. The wisdom of him that prayeth not fadeth away, as the house of him that is idle becometh foul : even so also is idleness as rust to him that is beautiful, and sloth as dirt to the sober priest.

27. In the world the riches of them that do little labour become the riches of them that work much. They that are come to a low estate teach, saying, Our fortune is the reason thereof : but they that are wise teach not so, saying, It is because they do not their work with all their might. If the work be not finished, and he profiteth not according to his desire ; Is the fault with it ? Nay, the fault lieth not with it.

28. Whosoever is of low estate, neither can work with his lips nor with his hands, whose form is not fair, who lacketh strength : though he be blamed by reason of these, yet is this age a lesser age and maketh his wealth only to be of any worth. Here endeth the book concerning divers matters.

29. The book concerning the wise ; the book concerning the good ; the book concerning the evil ; the book concerning friends ; the book concerning women ; the book concerning kings ; the book concerning divers matters. He who put in order these seven books is called Chakkindabi the true teacher of the law,* the great High Priest, Master of the Law,† that dwelleth in the building that is built of brick‡ in the Sacred Ground.§ He made clear the interpretation of the writings of the Book of the Proverbs of Common Life in the second fifth-month|| on the first day of the week¶ and the seventh of the waning moon, in the eleven hundred and ninety-sixth year.

* Or Saddhamma Dhaja.

† Or Mahā Dhammarāja Guru.

‡ Or in the Ok Kyoung.

§ Or Mahā Oung myē bōngtsān.

|| Or intercalary month.

¶ Or Sunday.

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The Bangash Nawábs of Farrukhábád—A Chronicle, (1713—1857).—By
WILLIAM IRVINE, C. S., *Fatehgarh, N. W. P.*—PART I.

From the time of Farrukhsiyar's accession in 1713, the imposing fabric of the Mughul Empire began to fall asunder. In the hands of weak and dissolute princes, surrounded by self-seeking and incompetent courtiers, the central power rapidly withered and decayed. As control relaxed, the provincial governors usurped more and more, in fact if not in name, the attributes of sovereignty, and transmitted their authority to their heirs with little more than the nominal concurrence of the *fainéant* descendants of Bábar and Akbar. To this period of disintegration can be traced the origin of nearly all the great Muhammadan principalities which the English found, when they first intervened in Indian politics. From 'Ali Wardí Khán, a subahdar who died in 1744, descend the Nawáb-Názims of Bengal; the Nizám of Haidarábád represents the family founded by Nizám-ul Mulk, Asaf Jáh, Subahdár of the Dakhin from 1713 to 1748; the kings of Audh sprang from Sa'dat Khán, Burhán-ul Mulk, appointed Subahdár of Audh in 1713; the Rohelas achieved their independence in the early part of Muhammad Sháh's reign; and the Játs of Bhartpur first rose into importance at the time when Churáman became the ally of 'Abdullah Khán, Kutb-ul Mulk, the rebellious Wazír of Muhammad Sháh. The Bangash house, which founded Farrukhábád and acquired a considerable territory in the middle Duáb, arose at the same time and in the same way as its more famous rivals; and although in the end it fell upon evil days, there was a time when its prospects of future greatness were little, if at all, inferior to

those of its competitors. At the death of Muhammad Khán in 1743, no one would have foretold that his successors would so soon be distanced in the race for power. The rashness of one successor and the weak unambitious nature of another, aided by the exposed position of their country, placed in the highway of all hostile forces from east or west or south, soon reduced Farrukhábád to comparative insignificance. Still, it is impossible to deny that the Bangash Nawábs have received but scant justice at the hand of the general historian. Nowhere has their history been told in any connected form, and many of the events in which they played a prominent part have been passed over or incorrectly narrated. To remedy, so far as possible, this defect, is the object of this paper. It is, I believe, the first attempt in English to tell, from the local point of view, the story of the Nawábs of Farrukhábád.

Account of the sources from which this history is derived.

Since many of the books I have used are MSS. not known beyond the limits of the district, it is desirable to begin with some account of them and their authors.

The oldest and most valuable of these is a collection of letters from and to Muhammad Khán, Ghazanfar Jang, made in 1159 H. (Jan. 1746—Jan. 1747) by Munshi Sáhib Ráe under the name of *Khujistah Kalám*, which denotes the date. There are 206 letters from, and 89 to Muhammad Khán. His correspondents included all the great men of that time, but letters are most numerous to the Emperor, to the Wazír Kamr-ud-din Khán, to Nizám-ul Mulk, to Khán Daurán Khán, Amír-ul Umrá, and to Roshan-ud-daula. The letters belong mostly to the period from 1140 H. to 1156 H. The MS. measures 10 in. \times 6½ in. and contains 251 leaves of fifteen lines to a page, but there are two or three leaves wanting at the end. The book, which was obtained from the heir of Sáhib Ráe's great-grandson Bhawáni Parshád, lay in a heap of other papers, which had been reduced to dust by damp and insects, in a long-disused room. No other copy appears to be in existence.

The family history of Sáhib Ráe, so far it can be pieced together from the fragments left at the end of his book, is as follows: His grandfather, Manohar Dás, filled the office of peshkár of Bahat, Sahind and Antri with other districts of Sarkár Gwáliár. He lived in Gwáliár where he had a masonry house. After his death, his son Dwárka Dás went to Sháhjahánábád in search of employment, and lived in the Pahárganj ward. Through his friend Lála Gaj Singh, peshkar of the *Khálsa Sharífa*, he was appointed to some office. He left two sons Dál Chand and Sáhib Ráe. The former was letter-copier and keeper of private accounts to Nawáb Sá'dat Khán. Sáhib Ráe was educated by his brother, and in the time of Far-

rukhsiyar (1713—1718) entered the service of Nawáb Muhammad Khán as Munshi or Secretary. The period of his death is not known. His grandson, Dalpat Ráe, held the same office and played a prominent part in the time of Nawáb Muzaffar Jang (1771—1796) and Násir Jang (1796—1813).

The next in order of time and perhaps of value, is a work by Sayyad Hisám-ud-din Sháh Gwáliári. His grandfather, Abu'l Hasan, was sister's son and son-in-law to the saint Muhammad Ghaus Gwáliári. Hisám-ud-din came to Farrukhábád in Muhammad Khán's time (before 1743) and served as a *yakka* or adventurer riding his own horse. He was present at the siege of Allahábád (Oct. 1750 to April 1751), the siege of Fathgarh (April-May 1751), and the campaign in Rohilkhand (Oct. 1751—April 1752). He became a Fakír and died in 1210 H. (July 1795—July 1796).

His book is of little value till he comes to the battle of November 1748, in which Káim Khán lost his life. From that time till the death of Ahmad Khán in 1771 the narrative is full and interesting. The style is clear and graphic with little attempt at literary effect, and I think he fully deserves Mufti Wali-ullah's praise of trustworthiness. The MS. was lent to me by Mír Fazl 'Ali from the *Madrasa* library of Mufti Wali-ullah. It measures $7\frac{1}{2}$ in. \times 5 in. and has 393 pages of 11 lines to the page. It is divided into the following headings—Muhammad Khán and Káim Jang, pp. 4-54—Imám Khán succeeds, fine to Emperor paid, Imám Khán imprisoned, Bibi Sáhiba escapes; pp. 54-89—Ahmad Khán, death of Naval Ráe, defeat of Wazír, siege of Allahábád, pp. 89-150—Return of the Wazír, Ahmad Khán goes to Rohilkhand, pp. 150-226—Ahmad Khán retreats under the Hills and gets aid from the Rájah of Alnora, pp. 226-249—The Wazír with the Mahrattas arrives and besieges Ahmad Khán, pp. 249-264—Interview between Ahmad Khán and the Rájah, the Wazír makes peace and takes the Nawáb's son with him towards Lakhnau, pp. 264-313—Ahmad Khán and his chiefs, with the Rohelas, march from the entrenchment, Ahmad Khán comes to Farrukhábád, pp. 313-340—Marriage of Muzaffar Jang, pp. 340-353—The Wazír brings the Emperor (Sháh 'Alam) to attack Ahmad Khán, pp. 353-393.

The next in order of date is Mufti Wali-ullah's *Taríkh-i-Farrukhábád* written about 1245 H. (July 1829—June 1830). Sayyad Wali-ullah, son of S. Ahmad 'Ali (who died 1187 H.=1773 A. D. aged 51), was born at Sándi, Sirkár Khairábád, on the 14th Shawwal 1165 H. (26th August, 1752). The family had been settled for ten generations at Sándi, about twenty-six miles south-east of Farrukhábád, on the other side of the Ganges. Before that, ten generations had lived at Dáipur, just east of Kanauj and close to the Ganges. The founder of the colony there is said to have come from Láhör.

When he was nine years of age, Wali-ullah came with his father to

Farrukhábád. He studied at Farrukhábád, Kanauj and Bareli, finishing under 'Abd-ul Básit Kanauji. In 1189 H. (March 1775—Feb. 1776), while on his way to Mecca, he visited the town of Rahmatábád in the eastern part of the Dakhin, where he was initiated into the Naqshbandi and Kádiriya tenets by Khwája Rahmat-ullah. In 1190 H. (Feb. 1776—Feb. 1777) he spent six months at the holy places. Returning to India he at length in 1196 H. (Dec. 1781—Dec. 1782) settled at Farrukhábád. From his savings he bought several houses, and joining them together he established a *madrassa* and named it *Fukhr-ul Maraba o Raba'-ul Mufúkhir*, which gives the date 1224 H. (Feb. 1809—Feb. 1810). His library is still kept there, but there are no scholars and nothing is taught. On the 29th August, 1805, he was appointed Mufti, which office he held till the 13th October, 1828, when he was succeeded by his relation, Mufti Wiláyat-ullah. Wali-ullah died on the 5th Jamádi II, 1249 (18th Nov., 1833). The following *tárikhs* give the year of his death. The first is by Bahádur 'Ali *Sayyad*.

I. *Ganj-i-ma'ni ba-raft zer zamín.*

II. *Dafan kardand ganj-i-ilm ba-khák.*

One of the copies of his history lent me by Mír Fazl 'Ali measures 10 in. × 6½ in., and has 370 pages, the number of lines to a page varies. The book is divided into two parts. Part I, History of Farrukhábád and the Bangash family (160 pp.) containing an introduction and six books, the first book comprising five chapters. Part II: divided into five books, (1) Famous personages; (2), Shekhs, Sayyads, and Faqírs; (3), Learned men; (4), Poets, and (5) an account of the author. In the historical part there is little or no detail, much being taken from the *Siyar-ul Mutákharrin* and similar works, though some facts are added from personal knowledge or enquiry. The most valuable part is, that giving the traditional origin of the Bangash Patháns. About two-thirds of the work is taken up with biographies of obscure Muhammadan worthies who lived in, or had visited Farrukhábád.*

The *Lauh-i-Túríkh* is an Urdú work which in its present shape was composed in 1255 H. (March 1839—March 1840). Mír Bahádur 'Ali's copy, lent me by his nephew Salámat 'Ali of Chibramau, measures 9¼ in. × 6 in., and has 554 pages, with 16 to 18 lines to the page. It is written in an easy popular style, and though defective in chronology and arrangement, it preserves a mass of interesting tradition which would otherwise have perished.

The origin of the book is thus described: In 1248 H. (May 1832—May 1833) Manavvar 'Ali Khán Bakhshi, great-grandson of Muhammad Khán's daughter, Daulat Khátun, began to prepare an account of Farrukhábád and

* He was the author of several other works.

its rulers from the work of Mufti Wali-ullah and other books, such as the *Khulásah-i-Bangash*, but more especially from the recollections of an old man, Allahdád Khán, son of Muqím Khán chela. Two copies of this work were given away, one to Nawáb Diláwar Jang, son of Nawáb Husain 'Ali Khán, and the other to Dharm Dás, Káyath Kharowah. Neither of these copies can be found now, although search has been made.

Manavvar 'Ali Khán says, that as he had neither practice in the Urdú language nor the habit of literary composition, he made his book over to Mír Bahádur 'Ali to be put into shape. Bahádur 'Ali returned it corrected in 1255 H. (March 1839—March 1840) with additions from his own knowledge. To the amended work were given the titles of *Anwán-i Khándán-i-Bangash* or *Lauḥ-i-Tárikh*. A poetical *tárikh*, giving the year 1255 H., is as follows:

“*Kyá baní hai, miyan, yih khúbb kitáb.*”

The book is divided into eight parts, besides the introduction. I. Nawáb Muhammad Khán, Ghazanfar Jang. II. N. Káim Khán. III. N. Ahmad Khán, Ghálib Jang. IV. N. Daler Himmat Khán, Muzaffar Jang. V. N. Imdád Husain Khán, Násir Jang. VI. N. Khádim Husain Khán, Shaukat Jang. VII. N. Tajammul Husain Khán, Zafar Jang. VIII. Chap. 1, Biography of Manavvar 'Ali Khán; Chap. 2, Biography of Mír Bahádur 'Ali.

Manavvar 'Ali Khán, born in 1799, was the son of Sarfaráz 'Ali Khán, Ustarzai Karláni Paṭhán. His great-grandfather, Khudádád Khán, had married Daulat Khátun, the ninth daughter of Nawáb Muhammad Khán, Ghazanfar Jang. On his grandmother's death in 1809, his father gave up all her jágirs, but Manavvar 'Ali Khán in 1839 still received 200 rupees a year from Sarfaráz Mahal, widow of Násir Jang, to whom the property had been assigned. Manavvar 'Ali Khán died on the 13th Sha'ban 1280, H. (24th August, 1863).

Mír Bahádur 'Ali was a Sayyad of Chibramau, a small town on the Grand Trunk Road, about eighteen miles from Farrukhabád. He claims to be descended from the eldest son of Zain-ul 'Abidain, who left Madína and settled in Turmaz. Some of his descendants were long settled near Láhor, but gradually moving eastwards they reached, some five hundred years ago, the town of Chibramau, Sirkár Kanauj, Súbah Akbarábád. It is said that once seventy to eighty families existed, occupying three *muhallas*, but for the last two or three hundred years these have disappeared. Now-a-days there is only one small *muhalla*, with five or seven families of Sayyads. During the Mughul rule the male members of these families sought employment at Delhi as Kázis, Muftís, religious officers, Díwáns, writers or revenue-collectors. The absence of a genealogical table is apologized for by Bahádur 'Ali in his biography. Owing to the unsettled times and the occurrence of several Mahratta incursions and village raids (*Gan-*

wár Gardi) the records of his ancestors had been destroyed. From signatures in books in his possession, he traces his family for six generations. His father and grandfather used to say the Chibramau Sayyads were among the descendants of Sayyad Kamál, who came down country from Láhor. One of his sons S. 'Ali Amjad settled in Chibramau, the others went to Samdhan, Parganah Tálgrám, to a village near Kanauj; to the town of Tálgrám, to Sándí, to Márahra and to Sakatpur. Bahádur 'Ali's ancestors, some openly and some secretly, were all Shi'as in religion.

Bahádur 'Ali's grandfather, Ghulám Husain, was born, he asserts, in 1101 H. (Oct. 1689—Sept. 1690) and he died in 1226 H. (Jan. 1811—Jan. 1812). He had only two sons, Chirágh 'Ali and Hashmat 'Ali (*b.* 1182, May 1768—May 1769, *d.* 1231 H. Dec. 1815—Nov. 1816). The grandfather was at one time in the service of Najíb Khán and Shuja'-ud-daula, from the former receiving Rs. 125 and from the latter Rs. 100 a month. For forty years he was in the service of Nawáb Dáim Khán, chela of Nawáb Ahmad Khán, first as a trooper on Rs. 80, then as a physician on Rs. 50, then as a pensioner on Rs. 20 a month. At last he was made teacher, on Rs. 10 a month, to the Nawáb's sons and wife. Till near the end of his life, he lived at the gateway of Dáim Khán's house in Farrukhábád. Five or six years before his death, when he became very feeble, his son and grandson persuaded him to remove to Chibramau, where he died on the 27th Ramzan, 1226 H. on the day of the Diváli festival. Bahádur 'Ali believed his grandfather could perform miracles, and relates a story of his appearing in a dream to a sick man, and telling him to gather grass from his tomb, which when ground was to be applied to the chest. An instantaneous cure was the result.

Bahádur 'Ali's father, Chirágh 'Ali, was born in 1157 H. (Feb. 1744—Jan. 1745). When twenty-five years of age he became blind. He retained, however, his bodily strength, and was endowed with great quickness of understanding and power of repartee. His touch was so fine, that he could tell the wrong from the right side of a rupee. He possessed a great talent for planning buildings; and he also practised physic, as he had learnt it from his father, Ghulám Husain. His memory was wonderfully good, and he remembered the details of every body's family history in all the country round Chibramau. He died on the 4th Ramzán, 1247 H. (6th Feb. 1832). Bahádur 'Ali's mother's people lived at Bhonganw, a town on the Grand Trunk Road in the Mainpuri district, about 22 miles west of Chibramau. She was the second daughter of Shekh Khalíl-ur-rahmán Khátib, son of Shekh Khair-ullah Khátib.

Bahádur 'Ali was born on the 20th Shawwál 1195 H. (9th Oct. 1781). In 1201 H. (Oct. 1786—Oct. 1787), his grandfather brought him to Farrukhábád to live at the gateway of Nawáb Dáim Khán chela. He was taught there for six years. He read through the usual Persian books and

wrote daily some composition for his teacher's correction. Mir Makhú Fakír was engaged to teach him writing. A few books on grammar and physic were read and the whole word of God; to this was added some arithmetic. It was also his habit to visit the holy and religious men of that time, whom he names. Once Háfiz Ghulám Muhammad condescended to go over a chapter of the *Kurán* with him.

When Bahádur 'Ali had completed his twelfth year, his uncle Hashmat 'Ali came home from Lakhnau. He had lived in that city for fifteen years as a teacher in the family of Lála Lachman Singh and Lála Budh Singh, Sarsút Bráhmans, employed in the service of Rájah Tikait Rás, Náib. In 1207 H. (Aug. 1792—Aug. 1793) Hashmat 'Ali, taking Bahádur 'Ali with him, returned to Lakhnau. The boy was made over to Mír Sájid 'Ali, a great friend of his uncle's, who followed the profession of a teacher. After a year had passed, Bahádur 'Ali was sent to read grammar with Maulvi Kamál Ahmad Sháhjahánpuri; and in order to gain an acquaintance with the poets, he frequented Maulvi Pír 'Ali Rasúlpuri. For a short time he also attended Maulvi Ghulám Muhammad, Fáik, Amethawi, who conferred on him the poetical title of *Núr*. A desire to write poetry having sprung up in him, he asked his uncle to introduce him to Miyan Ghulám Hamdání Mashafi, whose instructions he followed for several years. Here he took the names of *Gardiáh* and *Wámik*. It was at this time that he wrote a Persian *diwán* entitled *Juwálá-i-'Ishk*. He also attended the poetical assemblies held every fortnight at the houses of Miyan Jurát, Inshállah Khán, Mír Takki, Miyán Mashafi, Shahzádah Sulaimán Shikoh, Miyán Muntazar and others. On these occasions he recited *ghazals* under both the above titles in Persian and Urdu.

For the eleven years, ending in 1217, H. (May 1802—April 1803), which he spent in Lakhnau, Bahádur 'Ali to provide for his own support worked as a teacher at various places. He was also for a time a trooper in the Nawáb Wazír's service, in the time of Asaf-ud-daula (1775—1798) and Sa'dat 'Ali Khán (1798—1813). Farrukhábád having been taken over by the English, Bahádur 'Ali returned to his home in the end of 1217, H. and for a long period supported himself as a teacher. At length he was appointed tutor to Rájah Jaswant Singh, Baghela Thákur, of Tirwa in the south-east of the Farrukhábád district, on a salary of Rs. 8 a month, plus the food of two persons, besides presents. Through the Rájah's influence he obtained the appointment of Thánadár of Chibramau, which he held for two years. Afterwards, at the Rájah's request, he acted as Wakil for him and his brother, Kunwar Pitam Singh, at Mainpuri, Bareli, and Fathgarh, in the office of the Collector, the Civil Courts, the Revenue Board's Office, and the Court of Appeal.

On the death of his patron abovenamed,* Bahádur 'Ali lost his appointment and went to live in Farrukhabád. There for some years he taught the children at the house of Lála Daler Singh, Káyath Sribástab, "Chaoni-wála;" and subsequently he was for some years in the service of Ráe Chandi Parshád, Káyath Saksena, of *muhalla* Sadhwará. For two years he was with Mr. Martin, Indigo-planter, on Rs. 15 a month, as a *parwána-navis* at the Shamshábád factory; then for a year and a half he was employed on Rs. 20 a month in the Joint-Magistrate's Court at Sīhpura (now part of the Eta district). He was recommended by Munshi Zahúr 'Ali 'Abbási Shekhpuri. When the Court was abolished,† he went for three years to Lakhnau, where he obtained various employments, as a writer at the Daryábád Thána, forty-three miles east of Lakhnau, as account-keeper to a merchant, and for part of the time as a teacher. On his return he again became a teacher at Farrukhabád. In 1839 when he wrote, he had been for some years living at the gate of Lála Dil Sukh Ráe, the son, and Lála Shankar Parshád, the grandson of the deceased Diwán Debi Dás. During this period, hundreds, old and young, had been his pupils; but not one had done him any service, or turned out a real friend, or shown any affection, nor had even one been true to his word. He says he had no complaints to make nor any claims. Indeed he was accustomed not even to go down the street, where such ungrateful men dwelt.

Bahádur 'Ali was married on the 7th Zi'l-hajj 1220, H. (28th Feb. 1806) to the daughter of Shekh Karm-ullah of Shamshábád, son of Asad-ullah Farúki. The family had a quantity of land and groves, granted by the Emperors, with yearly and daily allowances. In the disorders of the time, all these came unjustly into the possession of S. Tahavvar 'Ali Kabáe. Bahádur 'Ali's father-in-law, his uncle Siffat-ullah, and Shekh Khúb-ullah, another relation, made great exertions to recover the property, but "*ba-sa-bab-ná-insháfi aur rúdígi hákimán-i-Farrukhabád ke, apne dád aur haqq ko na pahunché.*" The younger branches of the family scattered to Tálgrám, Sakráwah, and Chibramau.

Bahádur 'Ali had no issue; but, as he says, this being a matter out of one's power, he indulged in no regrets. He passed his days in reading, in recitations of poetry, in teaching, in reading aloud, and in the writing of books. And he failed not to give God thanks for his mercies;

"Harcha Sáki-í-má rekht, 'ain altáf ast."

He furnishes a list of thirteen works composed by him, besides short tales. The thirteenth is the History of Farrukhabád called '*Anwán-i-*

* Rájah Jaswant Singh died on the 3rd Oct. 1815, being succeeded by his brother Pítam Singh, who died 11th November, 1835—Kali Ráe, pp. 149, 150.

† The Sīhpura Joint-Magistracy existed from 1816 to 1828, Gaz., N. W. P., IV. pp. 3, 4.

Khándán-i-Bangash or *Lauḥ-i-Tárikh*. From about 1814 or 1819 he adopted the poetical title of "*Sayyad*." He also wrote in Hindi (*Bhákhhá*) in the name of *Manḥi*.

He says he intended his books to be a memorial of him after his death, and he hoped that they would take the place of children. In their composition he passed his days very happily. From the day that he began to write, he claims never to have written, with an object, in praise of any noble, nor had he sought their favours. He refused the invitations of the *Sáhibzádahs* of the city, for with worldly persons there can be but two objects *Káida* or *Fáida*, and when neither is desired there can be no reason to court the great. He prays that God may grant him similar independence during the small remains of life—" *Amín sam Amín*."

From 1225, H. (Feb. 1810—Jan. 1811) with the help of his second brother, Muhammad 'Ali, he observed the ceremonies of *Táziá'dári* yearly; he belonged to the Shi'a sect. As his home did not afford the requisite accommodation, he bought half an acre of land at his door, intending to build an *Imámbará* and a dwelling-house. He managed to complete a small dwelling-house, and the masonry foundations of the *Imámbará* were laid on the 13th Muharrum 1241, H. (30th August, 1825). But from poverty he had been unable to proceed with it; he writes that he hopes it may be finished before he dies, so that his soul may rest in his grave in peace. His father was buried at his own request in an earthen tomb within the *Imámbará*. Bahádur 'Ali himself died on the 30th Sha'bán 1270, H. (28th May, 1854).

There is a small work called *Mahárbát-i Mughuliya ba-Afghániya*, a copy of which was kindly procured for me by Maulvi Manzúr Ahmad, Deputy Collector (to whom I am also indebted for first calling my attention to the *Lauḥ-i-Tárikh*). So much of it is in verse, and the rest is in such a bombastic ambitious style, that the residue of fact is very small. Still, although the date of the copy is January, 1834 (the author's and owner's names have been carefully obliterated), I infer that its composition is of older date, or that independent sources were employed, for it contains a few statements not met with elsewhere. The MS. measures 9½ in. × 6½ in. and has 101 pages of 14 lines to the page. I have also picked up twenty-six leaves of a collection of reports from some Lakhnau *amil* in the years 1162—1164 H. From internal evidence I believe the writer to be Nawáb Baká-ullah Khán, Khán 'Alam, *funjdár* of Korá. I have gleaned from these letters a few facts about Naval Ráo's death and the subsequent events. The first nine leaves and some leaves at the end are wanting.

The *Khuláṣah-i-Bangash*, apparently almost contemporary with Muhammad Khán (1713—1743), is quoted once in the *Lauḥ-i-Tárikh*.

Neither of this book nor of a collection of letters made by Munshi Dalpat Ráe (d. 28th March, 1823), grandson of Munshi Sáhib Ráe, have I been able to obtain any trace. Other authorities used are well enough known. The principal of these are the *Sigar-ul-Mutákharrín*, *Túríkh-i-Muzaffarí*, *Khiz-ánah-i-'Amira*, *Amád-us-Sa'dat*, Life of Háfiz Rahmat Khán, *Futhgarh-námah* Curwen's translation of the *Balwint-námah* and the *Miftáh-ut-Tuwárikh* (edition of 1849). The *Ma'asir-ul-Umrá* in the article '*Abd-ul-Mansúr Khán*, when speaking of Káim Khán's death, refers for details to "the account of his father Muhammad Khán Bangash", but I cannot find in the book any biography of Muhammad Khán. The *Hadíkat-ul-Akálím*, of Murtaza Husain, I have also put under contribution.

NAWÁB MUHAMMAD KHÁN, BANGASH, GHAZANFAR JANG.

Origin of the family.

Muhammad Khán was a Bangash of the Karláni Kághzai clan. Malak Kais, 'Abd-ur-Rashíd, the ancestor of all Patháns, had three sons Sarban, Batan, Ghurghasht. The second son, whose name was Shekh Haiyát, obtained his appellation from his love of peace and his piety, *Batan* in their language signifying the Pure. Batan had three sons, Ismá'il, Ashyún, Kajín, and one daughter, Matú. The descendants of the sons are usually called *Batan*. The children of Matú by her husband, Sháh Husain, son of Mu'az-ud-din, are called Ghilzai, Lodi, Sarwání.

Sarban, the eldest son of Kais, had two sons, the elder of whom, Sharf-ud-din, had five sons. Of these the youngest was Amír-ud-dín. One day while out hunting Amír-ud-din at one of his camping-places picked up a Sayyad boy, to whom he gave the name of *Karláni*. When he grew up he was married to a woman of the tribe, and his children were called the Karláni. Among Karlánis are the Dilázák, Afrídí, Khaṭak, and Malak-mírí subdivisions. Relying on the truth of the above story, the Karláni believe themselves to be Sayyads. Karláni having been brought up with Adarṃar, son of Amír-ud-dín, his descendants have been classed among the Sarban tribes.

The origin of the name *Kághzai* is related as follows. Once Shekh Hayát, *alias* Batan, was anxious to marry his daughter Matú to Sháh Husain, son of Mu'az-ud-din Mahmúd, son of Jamál-ud-dín Hasan, son of Sultán Bahrám, who had left his own country of Ghor by reason of the desolation caused by the first Muhammadan invasions. Accordingly a man of the Kágh tribe, that is, a professional singer, was sent to enquire into the genealogy of Sháh Husain at Ghor, his birthplace. On returning he threatened to throw doubt on Sháh Husain's purity of descent unless his Kágh's, daughter were accepted in marriage. Sháh Husain married the

girl, who was called Mihi, and also Sarw. Having no children, she adopted a son of her co-wife Matú, and called him Sarwáni. By reason of this adoption he came to be called Kághzai.

The word *Bangash* originally meant the hill country. But in course of time it was applied to the inhabitants, those in the upper hills being called Bálá Bangash, those in the country along the foot of those hills, that is, in Kohát, were known as the Páin Bangash. At present the Bangash tribe is most numerous in Kohát, the rest dwell to the west of it, in Kúram and Shalúzám. The valley of the Bangash is encircled by hills, and its greatest length is from east to west. To the east and south-east is found the Khaṭak tribe in the hills of Khaṭkán; to the north are the Urakzais; to the south-west is the boundary of the Wazírís; to the west is the country of Kúram. The Bangash who live in Kúram and Páiwár are in subjection to the Tori; those in Shalúzám are their own masters; while those in Kohát are British subjects. In all they number about eighteen thousand households.*

Years after the first settlement took place, many of the Sarwánis quitted the Bálá Bangash, and from that time were designated Kághzai, those who stayed in their original seat continuing to be called Sarwáni. After this a party of Karláni, who had settled near the Sarwáni Kághzai in the Bálá Bangash, also began to be called Kághzai, though in truth they are neither Sarwáni nor the children of Kágh. In short, there are two kinds of Kághzai, (1) Karláni Kághzai and (2) Sarwáni Kághzai.

In the reign of 'Alamgír Aurangzeb (1658—1707), Malak 'Ain Khán Karláni Kághzai, quitting his native country for Hindustán, came to Mau-Rashidábád, where he took service in the troop of 'Ain Khán Sarwáni, then in the employ of the Khánzádah family. Malak 'Ain Khán, son of Gohar Khán, son of Sabza Khán, son of Jahán Khán, son of Sárang Khán, belonged to the Harya Khail, in it to the Shámilzai, and in it to the Daulat Khail, who are the descendants of Daulat Khán, known as Háji Bahádur. This latter must be distinguished from the other Háji Bahádur, the Koháṭi, of the family of Shekh Ádam Banúrí.

The town of Mau-Rashidábád is now little more than a name; its site has been turned into one vast tobacco-field. It lies close to the high bank, which overlooks the old bed of the Ganges and the stretch of lower land between it and the present stream. It is situated twenty-one miles west of Farrukhábád, five miles west of the old town of Shamshábád-Khor, and about one mile north-east of the modern but more thriving town of Káim-ganj. Though Mau has now only a few inhabitants, the country surrounding it is full of flourishing Pathán colonies, such as Ráepur, Pathaura, 'Aṭaipur; and the inhabitants of these places are all known outside the

* Haiyat-i-Afgháni, p. 448.

district under the generic name of Mau Patháns. They are to be found in numbers in our native cavalry, where they appear to bear a high character as soldiers.

Mau Rashídábád, the former name of which was Mau-Thoriyá, was re-founded in the reign of Jahángír about 1607, A. D. (1016, H.) by Nawáb Rashíd Khán, jágirdar of Shamshábád. A few of his descendants, known as *Khánzádahs*, still exist though reduced to poverty.* The myth so common in the East is told to account for the selection of the site. Jackals drove off the Nawáb's dogs, and in his astonishment, he inferred that such a soil would produce men more brave and strong than found elsewhere.

Muhammad Khán's early years.

'Ain Khán married in Mau, and when he died left two sons, Himmat Khán, aged thirteen, and Muhammad Khán, aged eleven. Since Muhammad Khán died in December, 1743, at about the age of eighty lunar years, his birth must have taken place about the year 1665. One day, the story goes, Muhammad Khán had ridden out on his elder brother's horse along the edge of the river, and he brought it back in a profuse sweat. Himmat Khán fearing that he would some day throw the horse down and get injured himself, gave Muhammad Khán a slight reproof. Angry at being spoken to, Muhammad Khán took refuge at a fakir's hut. The fakir, to cheer him, prophesied that he would one day be a *Báwan-Hazári* or Commander of Fifty-two thousand. Himmat Khán, the elder brother, in time left home and took service in the Dakhin, where he died. His body is interred in Sher Muhammad Khán's bág in Mau, a grove which had been planted in the days of Nawáb Rashíd Khán. He left one daughter, Bibi Fátima, who became the wife of 'Ináyat 'Ali Khán, Bangash Kághzai.

When Muhammad Khán reached the age of twenty years (*i. e.* about 1685, A. D.), he took service with Yasín Khán Bangash, then a leader of renown among the Patháns of Mau. In the month of October of every year, he started from Mau with four or five thousand men, horse and foot, and went across the Jamna. In those days the Rájahs of Bundelkhand were at incessant war with each other, and the trade of the soldier flourished. When any Rájah, who had a rebellious vassal to deal with, heard of Yasín Khán's arrival, an agent would be sent to engage him to punish the rebel. The ordinary terms were one-fourth of the plunder or of the money obtained. When the agreement had been reduced to writing, payment of one half beforehand was demanded as *Ajauri* or money in advance. This sum was divided among the troops, so much to each horseman and so much to each footman. A march was then made against, the place designated, and it was surrounded. If the inhabitants fought, force was met by force; if they asked for terms, a settlement was made.

* On Rashíd Khán and the Khánzádahs. Note A.

Any money collected was forwarded to the Rájah who had engaged the band, after deducting any balance that might be due. Whatever they had gained was divided, and the share of any man killed was set apart and sent to his widow at Mau. For eight months these plundering expeditions continued, and when the month of June came, they all returned to Mau. Owing to the rank of 'Ain Khán's family and his own relationship to them, Yásín Khán had great affection for Muhammad Khán. Yásín Khán was an Ustarzai Bangash, a native of Mau, and a relation of Muhammad Khán's mother. One day while besieging Orchha,* on the Datiya frontier, Yásín Khán was killed by a shot from a villager's gun. The Patháns then chose as their leader Shádi Khán, Bangash, of Mau, Yásín Khán's maternal uncle. Soon after, Muhammad Khán having quarrelled with Shádi Khán, left him, and with his seventeen followers, sought employment on his own account. Gradually all the Mau Patháns joined Muhammad Khán's standard. They went from the service of one Rájah to another, and in this manner many years were passed in the Dakhin and Bundelkhand.

Bundelkhand politics during the second half of the seventeenth century seem to be unusually obscure, and as I have not been able to verify them from other sources, I only give for what they are worth the one or two stories, relating to this early part of Muhammad Khán's career, which appear to have some sort of historical character. One is that when the Rájah of Datiya died, he was succeeded by his eldest son, Pirthi Singh, who at once set to work to turn out his brother, Rám Chand. The latter called in Muhammad Khán on the promise of a large sum of money, and with his aid Pirthi Singh was defeated, the Rájah being killed by Muhammad Khán's own hand. The Patháns had hardly reached Mau with their plunder when an emergent call for succour was received from Madár Sháh of Sipri† and Jalaun. He reported that Muhammad Amín Khán, with more than forty thousand imperial troops, was coming to overwhelm him. Muhammad Khán, hastily collecting all the men he had ready, marched to the Rájah's aid; but, before his arrival, the Rájah had already been forced to seek safety in flight. There were, however, several encounters between Muhammad Khán and Muhammad Amín Khán before a final peace was concluded.

The usual routine of these free-booting expeditions was for the leader to put himself at the head of from five hundred to a thousand men of his own and other clans. Muhammad Khán had by his boldness and bravery gained such a reputation, that all the Rájahs of the country trembled at his name. If he saw a village, town, or city weakly defended, he surrounded it, and sent to the headmen for his black mail (*nazaránd*). If one or two thousand rupees were forwarded, he went away—otherwise the place was

* Gazetteer, N. W. P. I, 554. On the Betwa, 142 miles S. E. of Agra.

† About 55 miles west of Jhansi in Bundelkhand.

attacked and plundered. There was sometimes stiff fighting on these occasions, and stories are told of twelve and twenty men having been killed by Muhammad Khán's own hand in the assault on some rich fort. The reward was sometimes plunder to the value of four or five lakhs of rupees.

Once in those days, Muhammad Khán, at the head of three hundred horsemen, made an attack on a fort, at the instigation of some Rájah. He first tried an assault but failed, and then had recourse to besieging, with no better result. The men inside made a valiant defence. Now, it so happened, that on one side of the fort was a large and deep piece of water. The Rájah, thinking that no one could attack him on that side, had left it quite unguarded. One night, at midnight, Muhammad Khán, taking with him several active men well armed, went into the tank and swam across to the foot (*fazl*) of the fort wall. Climbing up by the aid of a tree they then jumped down into the fort. The Rájah was asleep close by; roused by their arrival, he got up and fled, calling upon his followers for aid. To save his life, he tried to hide in a room, but Muhammad Khán followed him into it and slew him. Meanwhile so many of the zamindars had collected, that all Muhammad Khán's companions were killed, and the door of the room was shut upon him. Muhammad Khán, after commending himself to God, fixed his shield into the shelf, and raised a beam by applying his head. He thus got through to the open air, with his ears all bleeding. When he had pushed half his body through the roof, the Rájah's women, whose apartments were close by, renewed hostilities by hurling at him their rice-pestles and brass vessels. This attack put him still more out of breath, but brushing the women aside, he clambered off the roof down the wall by the aid of the same tree. Then, swimming across the lake, he regained his camp. Next morning the zamindars evacuated the fort, paid up their money and made Muhammad Khán an offering, touching his feet humbly and saying, "*Khán jiu, tum manai náhin, deotá ho, tumhari sanmukh ke ham náhin haiñ.*" In his old age, the Nawáb Sáhib was fond of telling this story, saying, that though he had many a time been wounded, no pain had ever equalled that of pushing aside the rafters of that roof, and during an east wind the pain still troubled him.

Hitherto Muhammad Khán had been little more than a petty free-booter, and having reached the age of forty-five, there seemed every likelihood that he would so remain during the rest of his career. Chance, however, called him to higher honours on a wider stage, to which we now propose to follow him.

Muhammad Khán enters the Imperial service.

In February, 1712, (Muharram 1124, H.) Bahádúr Sháh, successor of 'Alamgir Aurangzeb, died after a reign of five years. A struggle for the

succession then commenced between his sons. The victory remained with Mu'izz-ud-dín, who ascended the throne in June, 1712, under the title of Jahándár Sháh.

One of his brothers, 'Azim-us-shán, disputed the throne with Jahándár Sháh, but receiving a defeat retreated and was drowned in the river Ráví. 'Azim-us-shán had, however, on his departure from his government of Bengal, left at Rájmahal a son named Mirza Jalál-ud-dín Farrukhsiyar. This son determined to avenge his father. First he succeeded in persuading Husain 'Ali Khán, Súbahdár of Bihár, to espouse his cause. They were afterwards joined by 'Abdullah Khán, the elder brother of Husain 'Ali Khán, who held the Súbah of Allahábád.

Husain 'Ali Khán and Farrukhsiyar had not yet reached Allahábád on their march from Patna 'Azimábád, when Sayyad 'Abd-ul Ghaffár Khán Gardezi, sent by Jahándár Sháh at the head of ten to twelve thousand men, attacked 'Abdullah Khán at Allahábád. 'Abdullah Khán withdrew to the fort and sent one of his younger brothers to meet the enemy in the field. On cries arising that 'Abd-ul Ghaffár Khán was dead, his troops turned and fled.

On hearing of this defeat, Jahándár Sháh sent off his son, 'Azz-ud-dín, with fifty thousand men under Khwája Ahsán Khán. 'Azz-ud-dín had marched from Agra and had reached Khajwah,* when hearing that Husain 'Ali Khán and Farrukhsiyar had joined 'Abdullah Khán, he halted and began to entrench himself. Farrukhsiyar advanced on him with 'Abdullah Khán in the vanguard, batteries were prepared, and an artillery fight went on from sunset till the third watch of the night. Losing heart, the prince 'Azz-ud-dín and his Commander-in-Chief fled a little before day-break; and finding they were deserted by their leaders, the army dispersed. The camp and its contents fell into the hands of Farrukhsiyar.

From Khajwah letters were sent in all directions, calling for aid from all noted chiefs and partizan leaders; among others a royal "Shukka" and a letter from the Sayyad brothers were sent to Muhammad Khán, who was then in Gohad territory with a force of eight or nine thousand men. Sáhib Ráe Káyath, who had been his secretary from 1105 H. (Aug. 1693—Aug. 1694)† was sent to find out which side was most likely to succeed. On receiving his report, Muhammad Khán marched and joined Farrukhsiyar at Khajwah with twelve thousand men.‡

* In the Fathpur district, on the Grand Trunk Road, some twenty-one miles north-west of Fathpur.

† This date seems impossible, it is, however, that given in the "Lauh."

‡ The "Life of Háfiz Rahmat Khán" (p. 32) says he had only twenty-five men. This is not consistent with the rewards conferred on him for his services and the number in the text is more likely to be correct, seeing that Muhammad Khán had been leading a predatory life with success for over twenty years.

The contending Emperors at length met on the field of Samogar, nine miles east of Agra, in the parganah of Fathábád,* where the decisive battle was fought on the 14th Zi'l'hajj, 1124, H. (1st January, 1713). Though there is no mention of him in the standard histories such as the "*Siyar-ul Mutákharrin*,"† there can be no doubt that Muhammad Khán bore himself bravely in the van under the immediate eye of Sayyad 'Abdullah Khán.‡ One of his lieutenants, Sher Muhammad Khán, lost his life. Jahándár Sháh quitted the field near sunset, and after a time his chief supporter, Zúlfikár Khán, also withdrew. Victory thus declared itself for Farrukhsiyar.

On the 15th Zi'l'hajj, the day after the battle, Chín Kilich Khán, 'Abd-us Samad Khán, and Muhammad Amin Khán were presented by Sayyad 'Abdullah Khán, and made their submission. 'Abdullah Khán, with Lutfullah Khán and other nobles, was sent on to prepare the way at Delhi. A week afterwards Farrukhsiyar set out for the capital. On the 14th Muharram 1125 H. (30th January 1713), the new Emperor halted at Bárahpul near the city. Honours and rewards were distributed. Among others, Muhammad Khán was presented by the Sayyad brothers. He was invested with a dress of honour and received an elephant, a horse, a palki, a shield, a sword with jewelled hilt, a jewelled aigrette, a turban ornament (*jigha*), a fish ensign, kettle-drums and standards, besides assignments of revenue. At the same time he was raised to the rank of a Commander of four thousand. From that day he was styled Nawáb.

The following parganahs, all in Bundelkhand, were assigned to Muhammad Khán for the support of his troops.

- | | |
|-------------|-------------|
| 1. Irichh.§ | 3. Kálpi.¶ |
| 2. Bhándér.\|\| | 4. Kúrch.** |

* Proc. B. A. S., for August, 1870, p. 252.

† The author of the "*Siyar-ul Mutákharrin*" seems to have borne a grudge against Muhammad Khán, his name is omitted wherever possible, if he is named, it is only to depreciate him, nor is he ever accorded the simplest title, with which, as usual in native historians, men no more distinguished than he, are lavishly indulged. Grant Duff (p. 351) remarks on this author's prejudice against Afgháns. In one passage (Sul-M. Translation of 1789, Vol. III, p. 240,) he denounces them heartily as all bad.

‡ See Muhammad Khán's biography in the *Tárikh-i-Muzaffari* under the year 1156 H.

§ Gaz. N. W. P. I, 423. A town in Parg. Moth, Jhansi District, 42 m. N. of Jhansi.

¶ Gaz. N. W. P. I, 392. A parganah and town, formerly in the Datiya state but ceded to the Mahráttas in 1748. It is now in the district of Jhansi, and the town, on the Pahúj, is 24 m. from Jhansi.

|| Gaz. N. W. P. I, 474. A town and parganah in the Jalaun district. The town is on the right bank of the Jamna.

** Gaz. N. W. P. I, 505. A town and parganah in the Jalaun district. The town is 42 m. from Kálpi. Kúrch was a mahál of Sirkár Irichh.

5. Seondah.*

7. Síprí.†

6. Maudah.†

8. Jálaun §

The following men were deputed to manage these maháls—Daler Khán, chela, was posted to Kúneh, Seondah, and Maudah; Ahmad Khán, Warakzai, to Irichh and Bhándar; Pir Khán, paternal uncle of the Bibi Sáhíba, Nawáb Muhammad Khán's principal wife, to Kálpí; Shuj'at Khán, Ghilzai, to Síprí and Jalaun.

Muhammad Khán founds Káimganj, Muhamdábád, and Farrukhábád.

In the first year of Farrukhsiyar's reign, Muhammad Khán was despatched on two expeditions against the Rajah of Anupshahr and Rajah Medá. The first named was speedily reduced to submission; and the latter having been made a prisoner, was sent to the Emperor by the hands of Dáúd Khán, chela.

Muhammad Khán then obtained leave to return to his home, where he began to found a town a little south-west of Mau, within the lands of Chaloli, Mau-Rashídábád, Kuberpur and Subhánpur, and to it he gave the name of Káimganj in honour of his eldest son Káim Khán. It is now a place of considerable trade, it had 10,323 inhabitants in 1872, and is the head quarters of the tahsil. It is 21 miles north-west of Farrukhábád.

In the same year the fort and town of Muhamdábád, 14 miles south-west of Farrukhábád were founded, portions of five villages: (1), Kil-mápúr; (2), Kabírpúr; (3), Rohila; (4), Muhammadpur, and (5) Taqí-púr having been taken for the purpose. Tradition gives the following reason for selecting this site.|| Before the first Muhammadan invasion a group of twenty-seven villages had been given by the Rajah of Khor (now known as Shamshábád) to Kharowah Káyaths in his service. Before Muhammad Khán had risen to fame, and was still little more than a common trooper, he tried to persuade Har Parshád, kanúngo, to record him as the jágirdár of a village on the Káli in Tappa 'Azimnagar (now in the Eta District). The kanungo refused to do so without superior order. When Muhammad Khán rose to power, he recollected this; and selecting the high mound in the Kayath's land known as "Kal ká khera", built on it the fort

* Gaz. N. W. P. I, 582. A town and parganah in tahsili Girwán of the Banda district. The town is 11 m. from Banda.

† Gaz. N. W. P. I, 545. A town and parganah in the Hamírpur District. The town is 20 m. from Hamírpur.

‡ In the Gwáliar state, some 60 miles north of Sironj in the Tonk state, and about 55 m. west of Jhánsi.

§ Gaz. N. W. P. I, 433. A parganah, tahsil, and town in the district of Jalaun.

|| Kálf Ráe's "Fatehgarhnámah," p. 117.

of Muhamdábád. In one of the bastions, still known as the "Ráe Sáhib ká burj", Har Parshád, kanúngo, was built up alive. The old abandoned fort and the large lake just beneath it were owned and held, up to 1857, by the Nawáb Ra'is for the time being. Muhamdábád is a smaller place than Káimganj, but is still of some importance as the head-quarters of a Police division, and as the first halting-stage on the road from Farrukhábád to Mainpuri.

Parnnagar, the chief town of parganah Parnnagar, on the left bank of the Ganges, in the Farrukhábád District, is sometimes called Muhammadganj, after Nawáb Muhammad Khán, but the date of foundation is not known.

The City of Farrukhábád.

Nawáb Muhammad Khán's next undertaking was on a very different scale. He now set to work to found a city which, even in its present decaying state, counts as one of the principal places of Northern India. Residence at Mau must have been disagreeable to the new Nawáb. The Patháns would not allow him to ride on an elephant through the streets, for fear of their women's privacy being infringed. Afrídis, Toyahs, and Khánzádahs were numerous, but the Bangash were very few. If the Nawáb ever did pass by, the Afrídi boys threw clay pellets at him. To avoid this Muhammad Khán used to come out of the town, and mount his elephant near the tomb of Rahmat Khán, the martyr.* Often did he complain to the Bibi Sáhiba of the way these Patháns tried his patience.

An occasion for the acquisition of land for a site with the Emperor's consent soon presented itself. Kásim Khán, Bangash, father of the Bibi Sáhiba, first wife of Nawáb Muhammad Khán, was a soldier of fortune who had risen to the command of some three hundred men, in the service of some Rajah of the South. In 1126 H. (6th Jan. 1714 to 27th Dec. 1714) Kásim Khán was on his way home to Mau with all his wealth. Near where the native infantry lines and the European barracks now stand, a place then covered with jungle, he was set on by a Thákur Rájah of the Bamtela† tribe, whose villages were in the direction of Muhamdábád. Hundreds of men followed this Rájah in his plundering forays up to the bank of the Ganges and as far west as Mau. Kásim Khán and his party defended themselves bravely, but were at length overpowered and slain. He was buried where he fell. One ruined arch of his tomb still stands, in the middle of an enclosure surrounded with palm trees. A mango grove was planted to the west of the tomb, and the name of the village changed from Jamálpur to Kásim Bágh, under which name it was known in the revenue records till it was absorbed within the boundaries of the Fatehgarh cantonment.‡

* See note on Khánzádahs. † Note No. B. on the Bamtelas. ‡ Kálí Rao, p. 120.

The survivors of Kásim Khán's party arrived the next morning at Mau. To console his wife, Muhammad Khán set out for Delhi. There he was graciously received by the Emperor Farrukhsiyar who, by way of price for her father's blood, made over to the Bibi Sáhíba the whole fifty-two of the Bamtela villages. Muhammad Khán received a dress of honour, and they say he was made Názim of Gwáliyar: the truth of this latter statement is, however, extremely doubtful. The Emperor expressed a wish that a city called after his name* should be founded on the spot where Kásim Khán was killed, and that the fifty-two Bamtela villages should be included within its walls.

No better site could have been selected than that chosen for his city by Muhammad Khán. The strip of land along the right bank of the Ganges from Kampil to Kanauj is one of the most thickly-peopled and the most fertile in Northern India. There is abundance of water, for from the firmness of the subsoil, wells can be dug at pleasure; and the native saying is true without exaggeration, that in Farrukhábád there is a well in every house. They say that before the city was founded the Nawáb once came by chance to the high mound, the site of a Dhi or abandoned village, where the city fort now stands. The Ganges then flowed much nearer than it does now, and a delightful view extended on all sides to a distance of several miles. The Nawáb took a liking to the place, and said that a dwelling-house there would be very pleasant. In the *tarai* or low land the Patháns shot many alligators and crocodiles (*magar* and *goh*). There were quantities of wild geese and other game; they even say that the high grass and reeds concealed tigers, which sometimes devoured men.†

In truth, there is to this day no pleasanter view in the whole of the plains of Upper India than that obtained at all seasons from the fort of Farrukhábád. Passing the tiled bungalow used for the Munsiff's Court-house and the square unshapely mass of the tahsil building, we wend our way up to the pretty garden at the summit. There we pause a moment to take our breath, and admire the grandiose outline of Mr. C. R. Lindsay's Town Hall. As we turn with our face to the north, our gaze first falls on the ruins of the once magnificent pleasure-house of the Nawáb in the Páen Bágh; further on, the eye rests delighted on the slender minarets of the Karbala; beyond stretches all that remains of the Nawáb's hunting-ground or Ramna, still dotted here and there with trees; and closing in the horizon

* Farrukhábád was sometimes styled *Ahmadnagar* Farrukhábád, as in the coin of Sháhjáhán II. struck there in 1174, H. (Proc. B. A. S., July, 1876, p. 188,) and in the Persian accounts of 1209 and 1210, Fusli (1801-1802) preserved in the Collector's office. It got the second name, I suppose, in Ahmad Khán's time (1750-1771).

† This is really not so improbable as it sounds to us now, for so late as 1803 tigers were shot along the Ganges below Kanauj. See Major Thorn's "Memoir of the War in India."

is the faint silver streak of the Ganges. Turning half round to the right we see the city, looking like a vast wood of deep-shaded Nim trees, from which there peeps here and there a corner of the double-storied mansion of some Sáhíib-záda or wealthy banker. Turning back again and looking westwards, we find before us the domed tombs of the former rulers, of Ahmad Khán in the Bihisht Bágh within the walls, of Muhammad Khán and Kaim Khán further on beyond the Mau gate.

In 1126 H. (Jan. 6th 1714—Dec 27th 1714,) the foundations were laid under the auspices of Nekkám Khán, chela. The date is denoted by the words "Allah Ghani" which were commonly used in the family at the head of documents. All the buildings at Farrukhábád or Muhamdábád were built after the plans and under the care of Adam, mason, whose name used to be seen on the inscription of one of the fort gateways now destroyed. We learn from a scolding letter to Yákúb Khán, about the dilatoriness and dishonesty of one Muhammad Dánish, that the rates of wages were then, labourers two *fulús* or pyce a day, skilled bricklayers, five *fulús* a day, and those imperfectly skilled four *fulús*. The wages were to be paid direct to the men every night.

The Bamtelas did not resign their ancient possessions without a struggle. The work of building the city wall went on by day, but the Bamtelas, who lived all round, came in force every night and knocked the wall down again. They also destroyed some of the buildings in the fort. To get rid of the annoyance caused by these turbulent Thákurs, Muhammad Khán called in the imperial troops who were stationed at intervals round the city. The Bamtelas were ejected from the nearer villages, and any villagers aiding them were severely punished. The imperial forces remained till the city was well established, when their places were taken by the Nawáb's own men.

Aid was also obtained from friendly Rájáhs. They relate that Rájáh Tilak Singh Gaur of Siroli, Parganah Shamshábád East, ten or eleven miles south-west of Farrukhábád, unable from old age to come himself, sent his son Akbar Sáh (afterwards a chela under the name of Purdil Khán), aged fifteen or sixteen, at the head of seven hundred Rájputs of his own clan. They were posted just outside the Mau Darwáza where the Bamtelas usually passed. They had been there a week or ten days when the Bamtelas as usual came to damage the wall. This time they went round to the Kutb gate, on the north face of the city, and effected an entrance. Akbar Sáh Gaur drew out his men, and there was a good deal of fighting. On the one side three hundred and on the other five hundred men were killed. Lál Sáh, the head of all the Bamtelas, was wounded and made prisoner.

In spite of these interruptions Nekkám Khán, chela, had laid out the fort, to which he made three gates opening to the north. He also dug a

ditch as deep as the height of a man, and set up twenty earthen bastions. These, in 1839, could still be traced, though even then they had fallen out of repair. Not a vestige now remains. The same chela also built a palace, a mosque, and a hall of audience. The palace was called the Bará Mahal. In 1839 only the Bárahdari was left, the rest of the site was occupied by the private garden of Mukhtár Mahal, widow of the deceased Nawáb Shaukat Jang. The mosque was known as the "Bari Masjid," and the audience hall was called the "Bara Diwán-Khána." This latter was demolished by Nawáb Muzaffar Jang (1771—1796); and Nawáb Násir Jang (1766—1813) built a dwelling-house (kothi) on the spot. There were several shops of petty traders within the fort, but at first there were no other buildings except the above. After the mutiny, the Nawáb's palace was entirely dismantled; and beyond a small mosque, which may be the one referred to, there is not a trace left of any building in existence at the time of the mutiny.

There were twelve gates to the city: 1, Kuṭb gate; 2, Páen gate (also called the Husaini gate); 3, Gangá gate; 4, Amēṭhi gate; 5, Kádírí gate; 6, Lál gate; 7, Madár gate; 8, Dhaláwal gate; 9, Khandiya gate; 10, Jasmai gate; 11, Taráen gate; 12, Mau gate. The first, eighth, and eleventh are now closed; Amēṭhi, Dhaláwal and Jasmai are the names of adjoining villages; the other names explain themselves.

To seven of the gates, saráis were attached, so that from whatever direction a traveller arrived, he might find a convenient resting-place. The Mau sarái near the gate of that name, was erected by the Bibi Sáhíba, the Nawáb's wife. A sarái at the Jasmai gate was half built, then knocked down; the land was owned (1839) by the sons of Nawáb Azim Khán; at the Madár gate was a brick-built sarái, where now stands the Madár bápi built by Nawáb Muzaffar Jang, which, in 1839, was occupied by the son of Muhammad 'Ali Khán, *alias* Bulákí, son of Dildaler Khán and nephew of Muzaffar Jang. There was also a brick sarái at the Amēṭhi gate opposite the Angúri bāgh; this the Nawáb's descendants have demolished, and they have sold the materials, the site is used for the sale of wood and thatching-grass. A substantial sarái was also built near the Lál gate, which we English have taken to pieces and rebuilt after our own fashion.*

At each gate were stationed five hundred armed men and two guns, one on each side. The Nawáb's sons and slaves (Khánazáds), who had troops in their pay, were allotted places of abode round the outer part of the city. It was intended that money-changers, merchants, and the working-classes generally, should occupy the centre. The whole was surrounded by an earthen wall. For each of his twenty-two sons, Muhammad Khán built a brick fort and women's apartments. At each house he planted a private garden (Khána bāgh) surrounded with a high wall. Round the city

* This was done by Mr. Newnham, Collector, in 1826.

wall was a ditch, with sloped and levelled sides, fifteen yards wide and thirty feet deep. So long as Muhammad Khán lived, this ditch was cleaned every day, and the gates were kept in good order.

Round the fort were the houses of the chelas who were on duty day and night. Many groves were planted, especially noteworthy were the Naulakha and Bihár Bághs beneath the fort, which did not contain any mango trees, but consisted entirely of guava, ber, custard-apple and orange trees. The Nawáb's sons and chelas had orders to plant groves outside the city wherever they pleased. The soil is very favourable to the mango and it comes to great perfection; the water-melons are also very large and sweet and plentiful.

Two entire villages, Bhíkampura and Deothán, were included within the walls, besides portions of other villages. It was intended that each trade should occupy a separate bazar, hence we have the quarters named after trades such as Kasarhāṭṭa (braziers), Pasarhāṭṭa (druggists), Šaráfá (money-changers), Lohai (iron-mongers), Núnhai (salt-dealers), Khandhai (sugar-merchants), and so forth. Other quarters were set aside for particular castes, such as Khatrána (for the Khatrias), Mochiána (for shoe-makers), Koliána (for Hindu weavers), Sadhwára (for Sádhs), Bamanpuri (for Brahmans), Juláhpura (for Mussulman weavers), Rastogi muhalla, Agarwál muhalla, Kághazi muhalla (for paper-makers), Mahájanpura, Bangashpura, Khatakpura, Sayyadpura, and so on. This arrangement has been upset in more recent times, and the castes have become more or less mixed. Still it is observed to some extent, for I doubt if a single Sádhi lives outside the Sadhwára, and its offshoot the Sáhibganj muhalla.

Events from 1719 to 1726.

During the reign of Farrukhsiyar, Nawáb Muhammad Khán would appear to have attended Court seldom, being occupied with the founding of Farrukhábád. Meanwhile Delhi had been the scene of much intrigue. On the 9th Rabi II, 1181 H. (18th Feb. 1719) the Sayyad brothers,* 'Abdullah Khán and Husain 'Ali Khán, had deposed and imprisoned the Emperor Farrukhsiyar. After the short reigns of two boys successively raised to the throne, Abul Fath Násir-uddin, entitled Muhammad Sháh, succeeded on the 15th Zi'l Ka'd, 1181 H.† (18th Sept. 1719), his reign counting, however, from the deposition of Farrukhsiyar. After intrigues against the power of the Sayyads, with which we need not concern ourselves here, it was agreed that Husain 'Ali Khán, accompanied by the Emperor, should march to reduce the revolted provinces of the Dakhin. The march of the Sayyad began at the end of Shawwál‡ (end of August 1720). On the 9th Zi'l Ka'd, 1182 H. (3rd Sept. 1720), the Emperor made a first march from

* Siyar-ul Mutákhharin 418 (Lakhnau Edition). † S-ul-M 422. ‡ S-ul-M. 433.

Agra of three *kos*, accompanied by 'Abdullah Khán. He wished to halt till the 15th, the anniversary of his accession. Husain Ali Khán, however, urged an advance, and on the 14th (8th Sept. 1720) the army marched to a little beyond Fathpur Sikri. After four or five days they moved on southwards 'Abdullah Khán remained behind, and on the 19th Zi'l Ka'd (13th Sept. 1720), he started for Delhi.

Then follows in the "*Siyar-ul Mutákharrín*" a statement, damaging to Nawáb Muhammad Khán's reputation, which I quote. "On the road to "Delhi* Muhammad Khán, Bangash, came to visit 'Abdullah Khán and "expressed his desire to march and join Husain 'Ali Khán in his campaign "of the Dakhin, were he not prevented by want of means. He received "fifty thousand rupees, in addition to the several lakhs of rupees which "Husain 'Ali Khán had paid him to induce him to start. Then, with a lie "which looked like truth, he said he was going to the Emperor's camp. "He took his leave, and 'Abdullah Khán resumed his march to Delhi."

On the 6th Zi'l Hajj, 1182 H. (30th Sept. 1720, when about thirty-five *kos* beyond Fathpur Sikrí, Husain 'Ali Khán was assassinated with the Emperor's knowledge and consent. A return to Agra then commenced. As soon as he received word of his brother's death, 'Abdullah Khán raised to the throne Sultán Ibráhim, son of Raf'-ul Qadr, son of Bahádur Sháh.† This was on the 11th Zi'l Hajj, 1182 (5th Oct., 1720). A few days were spent in collecting such an army as could be got together in the time. On the 17th Zi'l Hajj, 1182 H. (11th Oct., 1720) 'Abdullah Khán started from Delhi.

On the 9th Muharram 1183 H. (30th Oct., 1720) Muhammad Sháh's camp left Sháhpur. It was here that Muhammad Khán, after a good deal of wavering and consultation with his friends, such as Shuj'at Khán Ghilzai and others, threw in his lot with the Emperor and joined him with three thousand men.‡ It is said that 'Abdullah Khán had written to him reminding him of the many favours he had received, and requesting aid at this crisis. If they gained the day, he would make Muhammad Khán first in the whole kingdom. But a *farmán* from Muhammad Sháh, another from his mother, Kudsia Begam, and letters from the nobles, arrived about the same time. Self-interest and perhaps some faint respect for the reigning house, appear to have carried the day.

When Kutb-ul Mulk 'Abdullah Khán reached Hasanpur§ three *kos* from the Emperor's camp, he halted. On the 12th Muharram, 1183 H. (2nd

* S-ul-M. 433.

† S-ul-M. 437 and 438.

‡ S-ul-M. 439.

§ Hasanpur lies, I believe, close to the town of Ol, in Parganah Faráh of the Agra District, some twenty-four miles north-west of Agra.

Nov, 1720) he placed his army in battle array. The battle began early on the 4th November and lasted all that day and night. On the 5th, after 'Abdullah Khán had descended from his elephant to fight on foot, he was wounded by an arrow in the forehead. Haidar Kuli Khán recognizing him, took him and his brother Najm-ud-din 'Ali Khán prisoners, put them on an elephant, and conveyed them to the Emperor. The drums then beat to victory. Muhammad Khán in this hotly contested battle appears to have fought in the main body. In Sáhib Ráe's collection, there is a long letter from Muhammad Khán to Rájáh Jai Singh Sawás describing the battle, but there are no personal details. The Nawáb for his services was promised six lakhs of rupees on receipt of treasure from Bengal, but the money was never paid.

If the local myth were to be believed, Muhammad Khán played a much more dramatic part than history accords him. The story goes that Muhammad Khán with his whole force moved down on 'Abdullah Khán. On the Nawáb's elephant, seated behind him, were Mukím Khán and Dáúd Khán, chelas. The elephant was driven close to that of Sayyad 'Abdullah Khán and Muhammad Khán gave him "*Salám 'alaikum.*" The Sayyad with a "*Wa 'alaikum*" stretched out his hand from the howdah to be kissed. Muhammad Khán then threw his silken girdle round it, and dragged the Sayyad out of his howdah. From the jerk 'Abdullah Khán's turban fell off, and Muhammad Khán threw him down a Kashmir shawl to wind round his head. The Sayyad refused to take it and, looking towards Muhammad Khán, spat at him. Mukím Khán and Dáúd Khán sprang down and seized Sayyad 'Abdullah Khán, the former taking his shield and the latter his sword. An attempt at rescue was foiled and about midday the Nawáb reached camp with his prisoner; on a demand from the Emperor the Sayyad was made over to him. The shield remained with Allahdád Khán, son of Nawáb Mukím Khán, up to the time of Nawáb Shaukat Jang (1813-1823); and Nawáb Amín-ud-daula used often to send for it, and highly extol the valour by which it had been won.

On the 16th Muharram, 1133 H. (6th Nov., 1720)* the Emperor Muhammad Sháh marched for Delhi; and advancing quickly he reached it on the 19th (9th Nov., 1720) and encamped for two days near the pillar of Khwájá Nizám-ud-din. Those who had distinguished themselves were presented. On this occasion Muhammad Khán, who had been made a Commander of six thousand on Muhammad Sháh's accession, was increased to the rank of *Haft Hazári* 7000 horse. He received a *khilat* with seven lakhs of rupees in cash, he was granted the title of Ghazanfar Jang "The Lion of War", and the parganahs of Bhojpur and Shamshábád, both

in the modern district of Farrukhábád, were added to his former jágírs. He was soon after appointed Subahdár of Allahábád (between 22nd Oct., 1720 and 11th Oct., 1721).* At this time, his 'Ámils or subordinate governors were for Allahábád, Bhúre Khán, chela; for Irichh, Bhándér and Kálpí, Daler Khán, chela; for Sípri and Jalaun, Kamál Khán; for Bhojpur, Nekkám Khán, chela; for Shamshábád, Dáúd Khán, chela; for Budáon, Sahaswán (now both in the Budáon district) and Míhrábád (now in the Sháhjáhánpur district), Shamsher Khán, chela.

In 1135 H. (1st Oct., 1722—20th Sept. 1723) Samsám-ud-daula procured a grant of the Subah of Agra in favour of Rájáh Jai Singh Sawáe † Jai Singh soon after marched against Churáman Ját, to punish him for having sided with the late Wazír, 'Abdullah Khán. Muhkam Singh, son of Churáman, insulted ‡ his father in open darbár, and rather than bear the disgrace the father committed suicide. Badan Singh, nephew of Churáman, sided with Rájáh Jai Singh. The fort of Thún was occupied on the 9th Safar, 1135 H. (8th Nov., 1722), and Badan Singh, who was father of Suraj Mall, then succeeded to the territory. In this campaign Muhammad Khán bore a part.

In the fifth year (Jan. 1723 to Dec. 1723), Muhammad Khán went with the army under the command of Sharf-ud-daula Irádatmand Khán and Rájáh Jai Singh, sent to chastise Ajít Singh Rañhor, Rájáh of Márwár. Before the army could reach his territory, Ajít Singh was assassinated by his son Bakht Singh.§ Through the mediation of Nawáb Muhammad Khán, Dhonkal Singh made his submission to the Emperor.||

Muhammad Khán had barely reached Mairtha with Abhai Singh *alias* Dhonkal, when he was recalled to undertake the recovery of Bundelkhand from Chattarsál. Six months were employed on this duty, when on receipt of intelligence that Mubáriz Khán, faujdár of Burhánpur, had been killed, he was ordered to return from Bundelkhand to the Duáb, and thence to proceed by way of Akbarábád to Gwályár to meet an irruption of the Mahrattas. Báji Ráo had appeared north of the Narbada, had attacked

* The local MSS. say Agra, but I think this must be a mistake. For some disparaging remarks about Muhammad Khán in regard to this Allahábád appointment, see S-ul-M. 451, line 5 from end.

† S-ul-M. p. 456.

‡ S-ul-M. p. 439.

§ Tod (Madras Reprint, 1873,) Vols. I, 636 and II, 81 gives the date about 1780 S., corresponding to July, 1723.

|| Muhammad Khán is not named in the list of Musalmán leaders in Tod, II, 80, but the same authority shows that Dhonkal, or the exterminator, was a nickname of Abhai Singh, son of Ajít Singh. The "Tarikh-i-Hindi" mentions Muhammad Khán [Dowson's Elliot, VIII, 44.]

Girdhar Bahádur, the Imperial Governor of Málwa, and for two seasons (1725—1726), had obtained plunder and contributions.* Muhammad Khán was appointed to the command of five thousand men, with two lakhs of rupees a month for their pay. He waited at Akbarábád to receive the money and was then told to go on to Gwáliár, where he entertained nearly ten thousand horsemen, and lay there idle for seven months.

On his way back from the above expedition, Muhammad Khán was asked by Khán Daurán Khán, who then held in jágir parganahs Bhongám† and Tálgrám,‡ to send two thousand men to aid Mahtya Sadánand in reducing to submission Jaswant Singh, zamindár of Mainpuri. The traditional story is, that the Chauhán Rájáh, Dalíp Singh, neglected to pay his respects to the Nawáb, and Bhúre Khán with five hundred horse was sent to bring him. When the Rájáh came before the Nawáb, he delayed in making his salám, and Bhúre Khán bent his neck down with his hand. The Rájáh freeing himself drew his sword. Then the Nawáb sent an arrow at him and hit him in the head so that he died on the spot. His son, Jaswant Singh, was appointed his successor and the Nawáb resumed his road to Farrukhábád.§

Bundelkhand Affairs.

We have already seen,|| that the jágirs given to Muhammad Khán in the reign of Farrukhsiyar and the early part of that of Muhammad Sháh, lay mostly in Bundelkhand. Farrukhsiyar (1713—1719) granted him the parganahs of Sehand¶ and Maudah** in jágir: to the charge of these Daler Khán, chela was appointed. In the first year of Muhammad Sháh's reign (Feb. 1719—Feb. 1720) a *tankhwa* was granted on Kálpi,†† Irichh,‡‡ and other places in Bundelkhand.

In the same year, 1719—1720, it was reported that the Bundelas had plundered Kálpi, had killed Pír 'Ali Khán, Muhammad Khán's 'Ámil, and his son. They seized the women and children of the respectable Muhammadans, and knocked down their houses, mosques and tombs. Nawáb Burhán-ul Mulk then asked that the Mughuls might be sent against the

* Grant Duff, 218, Bombay reprint, 1873.

† In the Mainpuri District.

‡ In the Farrukhábád District.

§ Gaz. IV. 550, 552. Jaswant Singh's accession took place in 1783 S. = 1726

A. D.

|| P. 274.

¶ Twelve miles south of Banda.

** In the Hamírpur District.

†† On the Jamna, in the Jalaun District.

‡‡ In the Jhansi District.

invaders, but the Emperor confided their chastisement to Muhammad Khán. Daler Khán, ehela, was ordered off with a proper force, and marching rapidly he ejected the *Thánas* of the enemy from the parganahs of Kálpi and Jalálpur.* The inhabitants then began to return to the plundered towns.

At this period Nawáb Amín-ud-din 'Itimád-ud-daula passed away.† Some of his enemies considered that Muhammad Khán had been favoured by the late Wazír, and they caused letters to be written to the Rájáhs of Chanderi and Orchha and to other zamindárs, instigating them to resistance. The Hindus assembled to the number of thirty thousand horse, besides countless infantry.

Káim Khán, the Nawáb's son, then faujdár of Sarkár Ghorá, had meanwhile been besieging for a year the town of Tarahwán,‡ the residence of Pahár Singh. This place had four forts, very strong, surrounded with jungle, steep ravines, and difficult passages through the hills. Káim Khán had with him ten thousand horse, and by the greatest exertions he succeeded in capturing the fortress. He then made ready to march to the aid of Daler Khán.

Muhammad Khán now represented to the Emperor, that if the punishment of the rebels were not heartily desired, the army had better be recalled. The Emperor encouraged Muhammad Khán to persevere. But he, discouraged by the number of letters sent by his enemies to the Hindu Rájáhs, wrote repeatedly to Daler Khán enjoining him to restore the forts and villages of the enemy. Times had changed and the campaign must be relinquished. Despite these orders, Daler Khán, in the pride of his courage and resolution, thought not of the superiority of the enemy and refused to withdraw from offensive operations.

On the 29th Rajab of the 3rd year of the reign (1133 H., 13th May, 1721) Chattarsál advanced with nearly thirty thousand horse and a numerous artillery. Daler Khán with the force he had, some four thousand horse and foot, prepared for the attack. He rode at the enemy at the head of five hundred men, and threw them into confusion. By the fickleness of fortune he now received, besides sword and spear wounds, two bullet shots, one in the forehead and one in the breast. He expired on the spot, and his five hundred companions, after prodigies of valour, were all slain.§ When the emperor, Muhammad Sháh, heard of Daler Khán's death, he made a present to Muhammad Khán, by way of consolation, of a jewelled aigrette and a khilat.||

* In the Hamirpur District.

† He died in Rabi 1133 H. (January 1721).

‡ In the Banda District, 42 miles east of Banda. *Gaz. N. W. P. I.*, 593.

§ The "*Siyar-ul-Mutakhárin*," p. 452, says Daler Khán had 1000 men with him, of whom 700 or 800 were killed.

|| *S-ul-M.* p. 452.

Daler Khán, chela, was by birth a Bundela Thákur.* He is famed for his bravery, but he seems to have been very lavish and extravagant in his management. He spent one year's income in equipping a body of seventeen hundred horse, magnificently clad and armed. When the Nawáb sent urgent orders for remittance of revenue, Daler Khán marched with his regiment and halted where is now the Páen Bágh below the fort. Attending darbar, he made each of his men present a gold coin as "nazr." Daler Khán then took up the Nawáb's shoes and stood behind his seat, saying, "I am only fit to carry your shoes, you may give the Súbah to whom you like, one who will bring you heaps of money; these seventeen hundred men are all the revenue you will get from me." This made the Nawáb smile, he embraced Daler Khán and sent him back to his district.

Daler Khán took part in nearly all the campaigns in which Muhammad Khán was engaged. The Patháns and the Bundelas on account of his bravery, styled him "Súrmán" (brave, bold), the mark of which is that a man's arms are so long that his hands touch his knees when standing upright. Daler Khán had this peculiarity.

The traditionary account of his death is as follows: One day Daler Khán had gone out to shoot followed by only three hundred horse, the rest being left in camp. A scout brought word to Rájah Chattarsál, who came out with a large force. Both sides began to fire. Nawáb Daler Khán's companions advised a retreat. He refused, with the remark, "One must die sooner or later." Then reciting the final prayer (*Fútiha*) and taking up his horse's rein to urge him on, he rode straight into the Rájah's army and, cutting his way through, came clear out on the other side. Numbers of the Bundelas were killed. He then made for the Rájah's howdah, and at this moment he received a ball in his chest, so that he fell dead. All the three hundred horsemen shared his fate. When his troops heard of his death they came out to attack Chattarsál, who then retreated. Daler Khán was buried in the village of Maudah,† and all the people of Bundelkhand mourned his loss. On every Thursday sweetmeats are offered at his tomb. Every son of a Bundela, on reaching the age of twelve years, is taken by his father and mother to Maudah, where they place his sword and shield on Daler Khán's tomb. They make an offering, and the boy then girds on the sword and takes up the shield, while the parents pray that he may be brave as Daler Khán. Kettle-drums are regularly beaten at the tomb.‡

* The motto on his seal was "*Az lutf i Muhammad Daler ámadam.*" Hisám-ud-dín says he was uncle to the Ráná of Gohad living in 1753. If this be true, Daler Khán was a Ját, but the accepted story is that in the text.

† Gaz. I, 27. In the Hamírpur District, 20 miles from Hamírpur. The tomb is one mile outside the town (Gaz. I, 545) on the Hamírpur road. The date there given, 1730, seems to be a mistake.

‡ Note C. on Bundelkhand traditions of Daler (or Dalel) Khán.

About the time of Daler Khán's death, that is in 1133 H. (Oct. 1720—Oct. 1721), Muhammad Khán was appointed governor of Allahábád. The authors of the "Lauh" say the *Sanad* for Allahábád used to be with Amin-ud-daula, grandson of Muhammad Khán, and náib from 1786 to 1803, and that Islám Khán Bakhshi had a copy. I know not what has become of these now. The revenue is said to have been eighty-two lakhs of rupees.

In the latter part of 1723, when Muhammad Khán reached Mairtha* on his way to Court with Abhai Singh, son of Ajít Singh of Márwár,† a *farmán* and an order sealed by the Amír-ul-Umrá (Khán Daurán Khán) were received. These stated that Chattarsál had occupied a large portion of imperial territory, that Burhán-ul-Mulk had been sent in haste against him, and that Muhammad Khán should also hurry to the spot.

In obedience to this order, Muhammad Khán proceeded in the 7th year (Dec. 1724—Dec. 1725), to the Subah of Allahábád, which had been already granted to him with all its *sarkárs*. For years, owing to the resistance of the zamindars, his deputies had been unable to regain effective possession in Bundelkhand. After a two months' stay in Allahábád, an army of fifteen thousand horsemen was collected. With these he proceeded to the banks of the Jamna at Bhognipur.‡ Burhán-ul-Mulk had already returned, and had gone back to his Súbah of Audh.

Repeated orders came to make an advance, and several leaders were accordingly sent across the Jamna. Muhammad Khán then crossed the river himself. In the course of six months' fighting, he penetrated as far as parganah Sahendah, south of Bándâ. *Farmáns* and orders from Khán Daurán Khán were now received through Ayá Mall, stating that as Mubáriz Khán had been killed, the campaign against the Hindus had been postponed.§ Although the enemy had nearly succumbed, the Nawáb was reluctantly compelled to forego his advantage. The enemy swore by most solemn oaths not to re-enter Muhammad Khán's jágírs, and they retreated three marches from the Muhammadan army. After placing his *Thánas* in the country, Muhammad Khán came away. He then, as already related, was sent on duty to Gwáliyár to repel an expected attack from the Mahrattas. Taking advantage of his absence, the Bundelas, in the most faithless manner, broke their oath and set aside their treaty, and prevented the collection of any revenue.

At this period, Harde Naráyan and the other sons of Chattarsál had overrun the whole of Baghelkhand to the frontiers of Subah 'Azímábád,

* About forty miles west of Ajmir, in Jodhpúr territory.

† See back, page 283.

‡ In the Cawnpur district, on the road to Kálpi, about six miles from the Jamna.

§ Mubáriz Khán, governor of Haidarábád, was killed in battle with Asaf Jáh in October 1724. Elph. 615.

and approaching Allahábád had raised disturbances in that quarter. In the 9th year (1139—1140 H.) Muhammad Khán received a *farmán* directing him to proceed to his Súbah to restore order, Bundelkhand being a subordinate division of the Allahábád province. An allowance of two lakhs of rupees a month was made, afterwards commuted to a grant of the Chakla of Korá.

As soon as he reached Allahábád, Muhammad Khán began to raise an army. Seventeen rupees was the pay of a trooper and twenty rupees that of a Jamádar. On the 12th Jamáda II, 1139 H. (24th January 1727,) Akbar Khán, the Nawáb's third son, was appointed to lead the van and crossed the Jamna. Muhammad Khán's advance-tents were sent across the river, and he soon followed with fifteen to sixteen thousand horse and the same number of infantry.*

At this time the Bundelas, with a force estimated at 20,000 horse and more than 100,000 foot, held the whole of Baghelkhand up to Patna, the country of Sankrát, and Mándó (or Mádhon)† as far as Haldi:‡ the only place left was the fort of Bewand, [Bond, Pewand?] which Hardi Sáh and Jagat Ráe had invested with a force of 30,000 horse and 50,000 foot. To meet this powerful confederacy, Muhammad Khán urged the Wazír to aid him with contingents from Udait Singh, Rájah of Orchha, Ráo Rámchand of Datiya, Pirthi, zamindar of Sahendah, Durjan Singh, zamindar of Chanderi, Rajah Jai Singh of Maudah, Khánde Rám Narwari and Rajah Gopál Singh Bhadaurya. He also wished for the aid of certain faujdárs, Sayyad Najm-ud-din 'Ali Khán, Sábit Khán, Ján Nisár Khán, Buzurg 'Ali Khán, and the Naib Faujdár of Jaunpur. None of these men, except Jai Singh of Maudah, appear to have obeyed the orders issued to them from Delhi.

The first operations were directed to clearing the eastern part of Bundelkhand. The forts of Lúk§, Chaukhandi,|| Garh-Kakareli¶ and Mau** in the Sankrát-Barsinghpur†† country were reduced. They also obtained Ramnagar‡‡ the forts of Katauli,§§ Sahrah, and Kalyánpur,||| with a

* The crossing took place, I am inclined to think, at Allahábád, or perhaps, at the Mau ferry, some 35 miles above that place.

† Query, 22 miles west of Ríwah.

‡ Query, 10 miles north-east of Ríwah.

§ In Ríwah, east of the Tons. Long. 81°29, Lat. 24°55.

|| Long. 81.29½ Lat. 25.1. About 10 m. S. of Bargarh Railway Station, in the Ríwah state.

¶ Long. 81.17 Lat 24.26, west of the Tons, in the Pannah state.

** Long. 81°9 Lat 25°21 about seven miles S. of the Dabhaurah Railway Station.

†† Long. 81°1 Lat 24°48 about 7 m. east of the Jabalpur Railway.

‡‡ There is one Ramnagar about 2 m. west of Kalinjar.

§§ Long. 81°15 Lat 24°59'.

||| Long. 81°7' Lat. 25°.

hundred *kos* of the country belonging to Mándho* and Bándah. For a time the enemy hung about the hills near Tarahwán, after which they entered the fort, Chattarsál himself taking refuge in flight. Leaving Káim Khán to invest Tarahwán, Muhammad Khán himself went to within four *kos* of Sahendá, but the enemy again gave way and fled. The parganahs of Bhind,† Maudah,‡ Pailáni,§ Agwási|| and Simauni,¶ with the ferries, had now been cleared. The campaign up to the first capture of Tarahwán seems to have occupied ten months or a year.

Káim Khán, the Nawáb's eldest son, and another brother, Hádi Dád Khán, were left behind with 12,000 horse and 12,000 foot to besiege Tarahwán. Babu Chattar Singh, son of Rájah Jai Singh of Maudah, was also put under his orders, together with Khán Jahán, Halím Khán, Muhammad Zu'lfikár, Ráe Har Parshád, and two zamindars, Sadú and Har Bans. Sangráam Singh, brother of Anandi Das, had also promised to join with some men he had collected. Káim Khán's instructions were to take the place as quickly as possible, and then rejoin his father with the captured cannon, lead, and powder of Tarahwán, Kalyánpur and Kakrauri. The zamindars were to be conciliated, Tarahwán bringing in fourteen lakhs of rupees.

The fort of Tarahwán, the head-quarters of Pahár Singh, had three mud forts with four masonry citadels, surrounded by an extensive jungle. For many years no Muhammadan governor had attacked it, and for some months it resisted all efforts to reduce it. The garrison was commanded by Sabhá Singh, son of Harde Naráyan and grandson of Chattarsál, aided by Har Bans, zamindar of Bargarh** with a number of Mahrattas, "Barki," (?) and others. On the 9th Jamadi I, 1140 (12th Dec., 1727), after severe fighting, Káim Khán succeeded in entering the outer fort, having beaten in the gates by driving his elephant against them. The Hindus, after a short struggle, were expelled from the second fortress and compelled to take refuge in the third fort. About two thousand of the besieged lost their lives. From the walls of the fourth fort, the defenders threw down burning substances, and the contest was prolonged for some fifteen hours: at three hours before sunrise the survivors sallied forth intending to escape, when three hundred of them were killed, and as many more were drowned in the

* Mádhogarh, Long. 86°58' Lat. 24°34'.

† Mataundh, to the south-west of Banda, is suggested by Mr. Cadell.

‡ In the East of the Hamirpur district.

§ In the Banda district, the next parganah to Maudah on the east.

|| Augási, in the Banda district, the parganah next to Pailáni on the east. Mr. Cadell tells me that the name is spelt Agwási on a slab in the mosque at Augási built by Sháh Kuli on the site of the Hindu fort.

¶ About 10 miles south-west of Augási.

** Bargarh, a station on the E. I. Railway (?)

river. The fort was then completely occupied. The siege had occupied five or six months. After this victory Káim Khán marched against the fort of Kalyán Singh, eight *kos* from Tarahwán,* and against Muhkamgarh in the same neighbourhood.†

While Káim Khán was occupied with Tarahwán and the country to the east, Muhammad Khán advanced from Sihondah. Skirmishing went on continuously for one month and twenty-one days. The enemy had strengthened their position by throwing up strong entrenchments, overlooking the bed of the torrent, in addition to the village fort. Tradition hands down Ichauli as the site of the great battle which now took place. This might refer to the Ichauli on the Syáni river, eleven miles west of Bánda, although this village does not seem far enough to the south and west to fit in with the rest of the details; nor is there in the district anything known of a fight there against the Muhammadans. In the *Hadikat-ul-Akalim* the name is spelt *Ajúni* or *Ajúli*, and it is said to be in parganah Mahoba. The date of the battle was the 2nd Shuwwál, 1139, (12th May, 1727).

At about two hours after sunrise, the first entrenchment, defended by Harde Naráyan and Hindu Singh Chandela with twenty thousand horse and forty thousand foot, was carried by the Muhammadans, who had advanced slowly and in good order. Here Bhúre Khán, Diláwar Khán, Imám Khán, Ghulám Muhammad Khán, 'Abd-ur-rasúl Khán, and Muhammad Zamán Khán, chiefs and leaders, lost their lives, while Akbar Khán, the Nawáb's son, received a graze from a spent ball, and Sayyad Ja'far Husain Khán, Allahyár Khán and Mangal Khán were wounded. The Bundelas now retreated to a second fort occupied by Jagat Ráo, another son of the Rájah, with fifteen thousand horse. Fighting was resumed, and here Ahmad Khán, Irádat Khán, Sirdár Khán and Husain Khán were slain, and Rahmat Khán with other horsemen was severely wounded. At length Harde Naráyan, Jagat Naráyan and Mohan Singh, sons of Chattarsál,‡ and Hindu Singh Chandela fled to a third fort, near a village on a winding torrent surrounded by inaccessible ravines. Here were Chattarsál's own head quarters and a force of ten thousand horse and twenty thousand foot.

Muhammad Khán pursued his enemy and renewed the engagement. After several hours, the Bundelas continued their flight to a river with a

* Kalyánpur Khás is about 17 miles south-east of Tarahwán.

† There is a Mokengarh in the Indian Atlas, 5 miles south of Tarahwán on the Pysunni-nadi.

‡ This name is spelt Sattarsál throughout Sáhíb Ráo's MS., but I have adhered to the more usual form. The author of the *Hadikat-ul-Akalim* tells us both forms were used.

tortuous course, full of whirlpools and having many ravines. Driven out of this position, they took shelter in the ravines about half a *kos* behind their camp. Finding here no place of security, Chattarsál with his sons, their relations and dependents, having mounted on horseback in order to escape notice, made off twelve *kos* into the jungle. All the camp equipage, tents and cannon fell into the hands of the victors. Pursuit was made for a distance of two *kos*; the Muhammadans then halted and encamped. It was soon learnt that the Bundelas had gone off to the vicinity of Sálbat, Damdast, and Thána Paswárah.* These places are described as full of high hills, deep lakes, torrent beds, ravines, and thorny jungle of great extent. The Bundela leaders had thrown up entrenchments, intending to dispute the passage. Chattarsál himself took up a position at Surajmau some *kos* south of Jaitpur.

Muhammad Khán estimated his own loss in the above battle at four thousand to five thousand killed and wounded; and that of the enemy at twelve to thirteen thousand. The Muhammadan army was reduced to some fourteen or fifteen thousand horse, and there was a great scarcity of water and fodder. Not a single one of the Rajahs or faujdars had joined him.

The auxiliary forces of the Bundelas, numbering some forty thousand horse and one hundred thousand foot, were made up by the troops of the Rájah of Mándó,† of the Gahlwárs of Bijipur,‡ of Khánde Ráo Narwari,§ of the zamindars of zila' Málwá, of all Gondwána and Malak Gadh,|| with the Gaurs and the Parihárs of the country round.

The oral tradition of this battle gives a more romantic version of it. It is as follows: One day before the battle,¶ Muhammad Khán distributed ninety thousand rupees among the troops; and the heralds (naqib) announced that, the morrow being fixed for the decisive struggle, every man must be ready armed by midnight. On the other side Chattarsál made his preparations. His army consisted of one hundred thousand foot and seventy thousand horse. Several other Rájahs followed his standard.

From the hour of morning prayer the battle began. The contending leaders advanced slowly towards each other on elephants. Skirmishing parties were thrown out from both sides. The *Khalífa* used to say that he had at one time expended all the arrows from his quiver. So many were

* About 6 miles north-east of Mahoba.

† Mándogarh, 22 miles west of Riwah.

‡ Possibly the Bijipur in Scindiah's territory, 52 miles south-west of Gwáliár. Thornton, 120.

§ Narwar, a town about 40 miles south of Gwáliár.

|| Query. The Garh Kotah 25 miles east of Sagar. Thornton, 324.

¶ The authority for these details is Khalífa Ná'im, son of Káli Miyan Jí, the teacher of the Nawáb's chelas, who told the author of the "*Laub-i-Tarikh*."

lying about, however, that by holding on to his saddle and stooping over, he plucked up eighteen in one handful. About midday the Nawáb's elephant rushed at and struck that of Mangal Khán Musenagari,* and ran after it for some little distance. Chattarsál's army thought that Muhammad Khán had taken to flight. With one voice all the Bundelas shouted out that the Bangash had fled. Hearing this outcry, Muhammad Khán turned round with his face to the back of the howdah, calling out as was his custom "*Baháduro, yihí wakt baháduri ká hai.*" He asked the elephant-driver what this fighting meant, it had never occurred before, when the man explained that intending to fight Chattarsál's elephant, he had drugged his own. The elephant was again turned to face the enemy.

Muhammad Khán, armed to the teeth, was standing up to his full height in his howdah, the sides of which were some three feet high. Suddenly they see bearing down upon them two Bundela horsemen with spears in their hands, and as they come they avoid all encounter. When stopped by any of Muhammad Khán's men, they reply, "We have something to tell your Nawáb." At length they came close to Muhammad Khán's elephant. There they halted, and one of them got out a small bag from his waist-cloth and eat some tobacco. Then grasping his spear firmly in his hand, he shouted out "Bangash, keep a sharp look out, I am at you." He so impelled his horse, that it placed its two forefeet on the trunk of the Nawáb's elephant; he then made a thrust with his spear. The Nawáb avoided the blow, and shot an arrow at the man with such force, that he fell dead from his horse. The horse was killed by the elephant.† The second horseman did as the first, and was killed in the same way. The Nawáb exclaimed to Mangal Khán Musenagari—"How brave must these Bundelas be."

Bhúre Khán, chela, now placed himself at the head of a number of brave Patháns and penetrated the enemy's army, intending to kill Chattarsál. Bhúre Khán lost his own life instead, and the Nawáb's son, Akbar Khán, received a bullet wound. For the loss of Bhúre Khán the Nawáb wept, and for many days after the battle wore orange-coloured clothes in sign of mourning, saying, "What Bhúre said was true, he said he would die before me."

About two hours to sunset the elephants of Nawáb Muhammad Khán and Rájah Chattarsál met face to face. Chattarsál seated under an iron-

* Musenagar, parganah Bhognipur, Cawnpur district, on the left bank of the Jamna some 13 or 14 miles east of Kálpi.

† The tradition is that the Nawáb's arrows bore a head of several fingers' breadth, a shot from his bow usually killed any one hit. Up to Shaukat Jang's time (1813—1823) there were several of these arrows in the Armoury, and Chaudhri 'Alim-ullah, bearer of the Fish standard, had several of them.

plated canopy was encouraging his troops to the final onset. Nawáb Muhammad Khán aimed at the canopy with a steel javelin (*sáng*) which breaking through struck the elephant. Chattarsál himself swooned. The attendant in the hind seat said to the *mahaut*—"Drive off the elephant; the fight will be renewed to-morrow." Chattarsál's elephant was turned round and it fled for many miles. His troops began to retreat, and Ani Ráo, sister's son to the Rájah, was killed. The Patháns ran hither and thither despatching the flying Bundelas.

At night-fall Chattarsál came to his senses and asked who had won. His courtiers said, "No one has gained the victory, when you became insensible we retreated eight or ten miles, to-morrow morning we will renew the engagement." Chattarsál flew into a passion with his brothers and nephews, and declared that he would never retreat before Muhammad Khán. He wanted to know why they had brought him away, he would either go back or else take his own life. No one listened to his words.

The whole night long Nawáb Muhammad Khán and his men remained in arms upon the field of battle, expecting the return of the Bundelas. Not a single man got leave to go for food or water. Near at hand was a wild plum tree on which there was some unripe fruit. These were gathered one by one, and the Nawáb's *mahaut* driving his elephant up to the tree collected some of the plums, part of which he gave to the Nawáb.

On the 29th Shawwál, 1139 H. (8th June, 1727), twenty-seven days after the first battle, the imperial army marched towards the enemy's position. At one watch before sunrise on the 1st Zi'l-ka'd (9th June, 1727), Muhammad Khán mounted and placed himself at the head of his troops. Before, however, they could come to close quarters, and while they were still one *kos* distant, the enemy broke and fled towards Mahoba* and elsewhere. Those who lingered were slain. The forts of Bárigarh,† the residence of Khán Jahán, the sister's son of Chattarsál, and Lahuri-Jhumar,‡ submitted at once to the parties sent against them. The Muhammadans then encamped one *kos* beyond Mahoba, while the enemy lurked in the hills of Sálhat,§ there being but two *kos* left between the armies. Further progress was delayed by heavy rain, which rendered it impossible in that soil to place one foot before another.

At this point there seems to have been a delay of some five months during which the advance was suspended. It was not till the 17th Rabi II, 1140 H. (21st Nov., 1727) that the army got near to Sálhat. That very

* In the south of the Hamírpur District.

† Ten miles S. E. by E. from Mahoba.

‡ 16 miles S. E. of Mahoba.

§ Mr. Cadell tells me that Sálhat is still a well-known jungle between Mahoba and Jaitpur.

day Harde Sáh arrived to re-inforce Jagat Ráe. The enemy, from the strong and high earth-works which they had thrown up on the hills, kept up a musketry fire and discharge of arrows. This went on the whole day, and nearly one hundred of the enemy were killed and many were wounded. The Muhammadans also lost some men. At sunset the enemy gave way and many were destroyed by the artillery fire. Half of the hill and jungle was gained. Efforts were then directed to cutting down the jungle and making a road.

Another delay of four months appears now to have interposed. The complaint of Muhammad Khán is that the enemy were scattered all over the country like ants or locusts. Without numerous troops nothing could be done, and already all the troops, that could be paid from the two lakhs of rupees a month, had been entertained, while there was a further force under Káim Khán engaged in the siege of Tarahwán.

On the 6th Ramzán, 1140 (5th April, 1728) the army reached its encampment between Sálhat and Kulpahár.* The attack on the enemy was made on the 20th Ramzán (19th April, 1728). One *kos* beyond Kulpahár there are numerous high hills covered with thorny jungle. Here the enemy had prepared seven entrenched places, with two strong outworks in front. The walls and ditch were carried back on each side to the hill itself. On the summit of the hills were posted some of their best men who, as soon as the Muhammadans appeared, began to fire down upon them. The walls were first breached by artillery fire, when an assault was ordered. The enemy then retreated to the second outwork, where the contest was renewed. Thus, step by step, the hill was gained and all the entrenchments cleared. During the following night, about midnight, Harde Naráyan, Jagat Ráe and Mohan Singh attempted a night surprise, but without result, although three distinct attacks were made.

On the 21st Ramzán (20th April, 1728) Muhammad Khán started for Mundhárit where there was a fort built of stone on a hill surrounded by thick jungle. Although the defenders fired down on the scaling party, the fort was taken. There the army encamped and prepared for a further advance. The enemy's leaders then brought their infantry into the wood, which stretches far and wide for many *kos*. From the shelter of the trees they began to discharge their arrows and kept up a severe fire of musketry. Their skirmishers were soon expelled by the Muhammadans, headed by Akbar Khán, the Nawáb's son. Muhammad Khán also advanced in person to his support. Many heads of the fallen foe were cut off and brought in, with many stray horses which, together with a number of loaded baggage-camels, became the booty of the army.

* About 6 miles N. E. of Jaitpur.

† This I take to be Moorhari of the maps, 4 miles E. of Jaitpur.

The Muhammadans now fixed their camp in front of Kulpahár, with Jaitpur on their right, Mundhári slightly on one side in the same direction, and the hills of Sálhat, occupied by the enemy, on their left. Daily skirmishes occurred whenever the troops were out clearing away the jungle.

The enemy now gathered themselves together in the hills of Ajhnar,* which is three *kos* beyond Jaitpur, and Surajmau, which is the same distance from that place. The Muhammadan camp was moved into the hills beyond Jaitpur, while active preparations were made for the siege of Jaitpur itself. It had taken twenty months to drive the Bundelas as far west as Ajhnar. These twenty months, if we count from the 12th Jamádi II, 1139, (24th January, 1727), the date of crossing the Jamna, would end in Safar, 1140 (August, 1728).

During the rainy season (July to October, 1728), the siege progressed but slowly. Owing to the excessive moisture the mines fell in as soon as dug. The fort was protected on one side by a lake of great depth, one *kos* wide and several *kos* long, it was placed on a hill, and the enemy had mounted it with cannon and "rahkla." It was not till four months or so afterwards that the place fell. By the time it had been taken, the campaign had lasted over twenty-four months (Jamadi II, 1139, to Jamadi I, 1141 = January 1727 to December 1728).

At this period Muhammad Khán saw reason to complain bitterly of the way he was treated at Court. He says he had performed the work of seven or eight men, that he was fighting night and day; yet no honours were granted for his sons or relations, nor pensions to the dependents of those who had fallen. Instead of reward, their *jágirs* were resumed. The *parganah* of Sháhpur,† he was now told, had been granted for one harvest only, although it had been given in exchange for a gift of two *krors* of "dám." In the affair of Ajít Singh of Márwár, lakhs had been given away, while all that Muhammad Khán had asked was the restoration of one *parganah*.

For the preceding six months the enemy had caused confusion in parts of *parganah* Panwári.‡ Darak Singh, an ally of Chattarsál's, now took up a position with two thousand horse and five thousand foot in the strong fort of Sahandiś on the banks of a river extremely difficult to cross. Orders were given to Muhammad Bishárat Multáni, who commanded in Ráth,|| to coerce Darak Singh and take his fort. This man showed little zeal or energy, for he camped a long time in zila' Auli¶ on pretence of conciliat-

* Six miles S. of Jaitpur.

† Now in the Cawnpur District.

‡ The *parganah* N. W. of Jaitpur, in the Hamírpur District.

§ Mr. Cadell suggests Seonri, on the Dassan, 6 miles N. W. of Panwári.

|| About 12 miles N. of Panwári town.

¶ Query. Orái in the Jalaun District, the "l" being interchangeable with "r" at times.

ing his troops. He then lingered in Jalálpur,* and it was only on getting sharp orders to make over Auli to Ráo Rám Chand,† that he advanced and cleared the parganah of Ráth.

Sardár Khán was also sent with Kunwár Pancham Singh, to force Ráo Rám Chand's army to retire from the investment of the forts and thánas in the country of Rájah Pirthi Singh.‡ With the assistance of the Bhadauriya forces, these orders were executed.§

We have already seen that Tarahwán fell first before Káim Khán in Jamadi I, 1140, (December 1727). He then cleared the plain country and the hills in the east of Bundelkhand ; and, leaving Sayyad 'Arif Ali Khán in charge, aided by Sadu a zamindár, he rejoined his father. Hardly had he done so, when word came that at the instigation of the sons and grandsons of Chattarsál, the zamindár of Bargarh|| and Hindu Singh, with a force of five thousand horse and ten thousand foot, had broken into revolt. Káim Khán was at once sent back with five thousand horse and five thousand foot. When he came within twelve *kos* of Tarahwán, his spies informed him that the enemy had already regained the first outwork of the fort.

On the 1st Rabi I, of the 10th year=1141 H. (24th Sep., 1728), while Muhammad Khán was following up the Bundelas in the hills of Ajhnar and was besieging Jaitpur, his son Káim Khán commenced his attack, for the second time, on Tarahwán. On this occasion the outer fort only was taken. It was not till more than a month afterwards, on the 9th Rabi II, of the 11th year=1141 H. (1st November, 1728), that the final assault was given. A mine had been driven under one of the bastions and filled with gunpowder. The moment the explosion occurred the assault took place. About six hundred of the assailants were slain and a still larger number of the besieged. The rest gave way and fled towards Tarhat¶ pursued by the Muhammadans who, after the victory, occupied the fortress of Tarahwán.

Káim Khán followed up this success and, after five or six defeats in the field, so closely pressed his opponent at Bargarh that he was glad to submit. These operations must have occupied some months, for although ordered to rejoin his father at once, Káim Khán was still absent when the Mahrattas suddenly appeared on the 12th March, 1729, to turn Muhammad Khán's course of victory into defeat.

While Jaitpur was invested, Muhammad Khán moved onwards into the hills, and kept up constant skirmishes against the enemy under Chattar-

* Hamírpur District about 24 miles N. E. of Ráth.

† Rájah of Datiya ?

‡ Of Sahenjah ?

§ The Bhadauriya family history will be noticed hereafter.

|| About 34 miles east of Tarahwán, near the Jahbalpur line.

¶ Barhat ?

sál, Harde Naráyan and Jagat Ráo. At length Harde Sáh, Jagat Ráo, Mohan Singh, Lachman Singh, and other sons and grandsons came in with their families ; and after a time, Chattarsál himself with ten thousand horse and fifteen thousand foot drew near, bringing his Ráni and grandchildren. For three or four months (December 1728 to January and February 1729,) the Bundelas waited quietly in camp, expecting an answer to Muhammad Khán's report to the Emperor, in which he craved leave to bring his prisoners to Court.

Although no answer came negotiations went on. Diwán Harde Sáh* was more especially friendly with Muhammad Khán, they frequently made excursions and hunting expeditions together, and talked of setting out together on a "mulgíri." The only difficulty was a want of carriage, and Káim Khán was requested to send Yákút Khán with money for expenses, and carriage for fifteen hundred horsemen. Those men with Káim Khán who had relations with the main army, were to procure and send carriage for them.

For a long time no settlement with the Bundelas could be come to. When Muhammad Khán asked for the delivery of his jágirs, which they had long occupied, they replied that besides the troops with them they possessed nothing. At length they agreed to submit to the Imperial authority, and bound themselves by all the oaths most sacred to Hindus never to rebel again, but to deliver up all the places they occupied, and to permit Imperial thánas or armed posts to be placed throughout their country.

From Delhi no answer was vouchsafed, and three months passed by. The Bundelas made use of this interval to send messengers with overtures to Burhán-ul-mulk, who received them favourably. Letters came privately from Court inciting Chattarsál to resist and recommence hostilities. The Bundelas had by this time learnt that Muhammad Khán had powerful influences against him at Court, and were thus encouraged to renew the struggle.

When three months had thus passed by, the time of the Holi festival approached. Chattarsál was brought by his sons in a palki to Muhammad Khán. They represented that from age, weakness, and confinement their father was extremely ill. If he died in camp, it would be said that he had been made away with. On these pretexts leave was obtained to remove the old Rájah to Surajmau, three kos beyond the Muhammadan camp, which was then in the hills some distance south of Jaitpur. Jagat Ráo and his brothers were also allowed leave to celebrate the Holi festival (February—March 1729).

As there had been every prospect of a speedy end to the campaign, Muhammad Khán's allies had returned to their homes, many of his soldiers had proceeded on leave, or had returned to Allahábád, and others were scat-

* "Diwán" seems to have been the title of the eldest son.

tered about in small parties at the *Thánas* he had established. In all, about four thousand horsemen were left with his standards. Rumours now began to spread that the Mahrattas, who had just defeated and slain the Názim of Málwa (Girdhar Bahádur), had been sent for; but relying on the solemn covenant which had been entered into, Muhammad Khán treated all that he heard as popular falsehoods. He collected no supplies nor any stores of grain.

It was not till the Mahrattas were within eleven *kos* of his camp, that Muhammad Khán became assured of their approach. By great exertions, he increased his force to about nine thousand or ten thousand horse and the same number of foot. He proceeded to throw up an entrenchment round his camp. Diwán Harde Sáhe, the eldest son and heir of Chattarsál, remained so far faithful to his engagements as to take no active part in the attack; but all the others went over to the Mahrattas. The only other ally was Rájah Jai Singh of Maudah, but he seems to have been a half-hearted one, for he insisted on discharging most of the one thousand men he commanded, and retained with him no more than one hundred horse and one hundred foot. Kunwár Lachman Singh, brother of the Rájah of Orchha, attended for a time with four or five hundred men, but soon withdrew on some excuse. There were great difficulties caused by the want of money, the revenue of Chakla Korá not being received. Gunpowder and other requisites were also needed, and the Emperor was asked to send one thousand *mans* of lead, one thousand *mans* of gunpowder, two large cannons, and fifty "*rahkla*."

The Mahratta army was commanded by Báji Ráo, the *diwán* of Rájah Sáhu, Pilá Jádón and others, twelve leaders in all. No account could be got of the force they had when they started, but on the way they had been joined by all turbulent spirits among the zamindárs, who came in the hope of plundering and laying waste the imperial territory. The total force had thus swelled to nearly seventy thousand men besides an equal number of Bundelas.

On Wednesday the 22nd Sha'bán of the 11th year (1141 H. = 12th March 1729), the Mahrattas sent out a party to the hills of Ajhnar, who came within one *kos* of Muhammad Khán's encampment and reconnoitered the position. They fell on the grazing cattle of the camp followers, but were soon driven away by the Muhammadans, who brought in three heads and some horses.

The next day, before sunrise, the Mahrattas advanced by the right and left to the rear of the camp, where they cut off the camels and other beasts of burden when going out for grass. Troops were sent out to recover the camels and the fighting went on till midday. The same tactics were repeated on the 24th (14th March, 1729), and the enemy were again repelled, twenty heads being brought in.

On the 25th Sha'bán (15th March, 1729), Muhammad Khán made a sortie and all day the enemy hid themselves in the hills. Near sunset they suddenly rushed out, but were driven back with a loss of five men and four horses. After the first watch of the night, when it was very dark, the contest began again on the right wing and "the fire was like the fall of leaves from trees." Four of the enemy were killed and some horses and camels captured. It was now reported that Báji Ráo had sent for his brother, who was then on a plundering expedition towards Kotah and Búndí.

Gradually the Mahrattas succeeded in closing round the camp, and placed outposts to the rear where they kept up the most vigilant outlook. In all directions the roads were closed, prices rose very high, *mahrwah* or *mandwa*, a small inferior grain, cost twenty rupees the seer, and other grain could not be procured. All, great and small, endured the greatest privations for two months (15th March to 15th May, 1729,) sustaining life on the flesh of camels, horses, and cows. Nor were they left in peace by night or day; they were in action often five and six times a day. Each day the enemy "like the multitude of the stars before the rising sun, fled "into the rocks and hollows of the hills." But Muhammad Khán had not men enough to leave part to guard his tents, and with the rest to advance and set up batteries against the enemy's place of refuge, nor to pursue them when they retreated.

The Mahrattas, hearing that Káim Khán, the Nawáb's son, had reached Supá,* six *kos* the other side of Jaitpur, with supplies and re-inforcements, moved off to oppose him. Muhammad Khán's soldiers, distressed by the high prices and want of pay, seized the opportunity and suddenly set off on the road to Jaitpur. With the Nawáb there were not left more than one thousand horsemen. The Bundelas soon hearing of the retreat of the soldiers issued from the hills of Ajhnar. Muhammad Khán mounted and rode out to meet them leaving not a single man behind in camp. From evening till one hour and a half after sunset fighting went on with spears, swords, arrows and muskets, but at last the enemy returned to the hills of Ajhnar. Muhammad Khán maintained his position for three hours longer, while his chief men went off to Jaitpur to collect the fugitives.

Before the arrival of the leaders at Jaitpur, the men had continued their flight and were already scattered in all directions. His companions now counselled Muhammad Khán to commence a retreat. Up to this point he had stood fast, resolved to maintain his name and fame as a soldier, but now that honour was satisfied, he was persuaded to move, in the hope of recalling the fugitive troops. Muhammad Khán had "tried to seek escape "by death, but since, of the life lent to him, some part was yet unspent, he

* About 8 miles N. W. of Mahoba, and 14 miles N. E. of Jaitpur.

"fought on till at midnight not another infidel was to be seen either to the left or to the right, but still death did not come to him."

On reaching Jaitpur he began at once to strengthen the fortifications. But there were no stores of food and no time to send for supplies. The Mahrattas having defeated Káim Khán soon returned, and completely invested the town and fort of Jaitpur, into which Muhammad Khán had withdrawn with his men and had closed the gates. A cannonade from both sides began and Akbar Khán, the Nawáb's son, who was renowned for his strength, threw down heavy stones from the fort wall and killed many of the Mahrattas. When the besiegers found they could not take the place by assault, they decided to starve out the garrison. Jaitpur was strictly invested for several months till there was no longer any grain for food. Then the soldiers began to slaughter their horses and bullocks. Flour could not be procured even at one hundred rupees the seer. Some of the Mahrattas used to come at night with supplies of flour, half of which was made up of ground bones. Those inside let down their money by a rope, flour was attached in its place at the rate of a seer for every hundred rupees, and the rope was then drawn up.* Many of the soldiers died of starvation, and many more leaving the Nawáb to his fate escaped from the fort. Báji Ráo's orders to his guards were that any of Muhammad Khán's men who gave up their arms should be allowed to pass unmolested. Many having no food preferred to give up their arms and get away. Only some thousand or twelve hundred remained with the Nawáb.

When the Mahrattas had fallen thus unexpectedly on his father, Káim Khán was still away at Tarahwán. He obeyed at once the summons to him. He got as far as Supá, a few miles from Jaitpur, when the Mahrattas met him. As he had barely more than a thousand men with him, he was soon defeated, many of his men killed and the supplies under his convoy scattered. All hope of immediate relief was thus dispelled. It only remained to Muhammad Khán to call upon the Emperor and the great nobles and Rájahs for aid to extricate himself from his trying position. These efforts were unavailing. Although the most urgent appeals were sent in all directions, not a hand was raised to help or encourage him.

In this extremity Nawáb Muhammad Khán wrote to his son, Káim Khán telling him to go to Sa'dat Khán Burhán-ul Mulk Bahádur Jang, and 'Abd-ul Mansúr Khán to demand aid. His orders were to head the relieving force in person, in order to extricate his father from the toils of the Mahrattas. Káim Khán went to Sa'dat Khán and 'Abd-ul-Mansúr Khán at Faizábád. 'Abd-ul-Mansúr Khán had married Sa'dat Khán's daughter, and he was also his sister's son. These two nobles decided that they would send no troops

* These details are confirmed by the author of the *Hadikat-ul-Akálím*, who got them, he says, from a book written by a man who was present throughout.

with Káim Khán, but kept him for several days in suspense. One day a Risáldár (commander of cavalry) in Sa'dat Khán's army, himself an Afrídí, commanding twelve hundred men, said to Káim Khán, "You will neither get troops here, nor will you be allowed to go yourself, you must devise some other plan."

The Bíbí Sáhíba, mother of Káim Khán, hearing reports of intended treachery, sent Neknám Khán, chela, to Faizábád. Reaching that place he went to the Risáldár already mentioned and convinced him and his Patháns, who were of Mau, Farrukhábád, Sháhjahánpur and Ánwala, that rather than allow Muhammad Khán to be captured, it would be to their interest to march to his relief. Neknám Khán told them to assemble whenever the camel kettle-drums should begin to beat in his camp. The same day Káim Khán and Neknám Khán visited 'Abd-ul Mansúr Khán, and asked leave to depart. 'Abd-ul Mansúr Khán proposed their waiting for the troops he had sent for, who would arrive in a few days. Neknám Khán then forced Káim Khán to rise, and pointing to Sa'dat Khán, said to Káim Khán, "You will never deliver Muhammad Khán by their means." He then in a great rage lead Káim Khán by the hand out of the audience hall. With them were sixty Patháns clad in chain mail, whose orders were to strike at once, if any one lifted a finger to touch them. Reaching camp the kettle-drums were beaten for the march. On hearing the sound, twelve hundred Patháns in 'Abd-ul Mansúr Khán's service left him to follow Káim Khán. When word was brought to him, Sa'dat Khán sent off a camel rider to recall Káim Khán. Regardless of the Nawáb's message he continued his route to Sháhjahánpur. There more men joined his standard. Thence he moved to Bangarh,* the abode of 'Ali Muhammad Khán Rohéla, from whom they obtained further re-inforcements. Then coming to Mau, numbers of recruits flocked to enter their service. The army thus gathered together numbered some thirty thousand men: as each man was promised one hundred rupees a month, the expenses were enormous. It was only by delivering over to them all the Nawáb's goods and chattels, together with all the cash he could obtain from the money-lenders, that Káim Khán induced them to enlist.

An advance was now made, and crossing the Jamna they passed into Bundelkhand. The Bundelas, hearing that Káim Khán was approaching with a strong force, hastened to make terms with Nawáb Muhammad Khán. They took a written agreement from him never to attack them again, and to be content with the tribute which had been formerly paid. Muhammad Khán at this time did not know that Káim Khán was marching to his relief. He had come several marches from Jaitpur when he met his son. Káim Khán proposed they should return to renew the war, but Mu-

* In the Budáon District about 10 miles N. of Budáon.

hammad Khán declined to break his pledge. Káim Khán's noble conduct at this trying juncture extorts words of praise from a most unfriendly critic, the author of the "*Siyar-ul-Mutákhharin*".*

The siege of Jaitpur had lasted three months and ten days, from the middle of May to the end of August, 1729, (Shawwál 1141 to Safar 1142); and with it ended Muhammad Khán's connection with that part of the country. For the rest of his life he continued to press on the Emperor and his unwilling wazír his losses and his claims. But he never again exercised any authority in, or obtained any revenue from the jágirs still nominally his within the limits of Bundelkhand. Once only while in Málwá did he write to his quandom ally, Harde Sáh, reminding him of an agreement made at Kharela† to give up the government cannon, and to refrain from interference with the jágir mahals. There was also an unfulfilled promise that Jagat Ráj's agents would pay eight lakhs for Sahendáh. Muhammad Khán reminds Harde Sáh that the jágirs were worth fifty or sixty lakhs a year, that never for one moment would he forget his claims, the matter was one of opportunity, and with God's help he would still enforce his rights. If Harde Sáh, who said he was a friend, allowed the jágirs to be "eaten" by others, he would become himself responsible. In the same letter, he expresses his satisfaction that Harde Sáh had taken the parganahs of Auli,‡ Kanár,§ Rámpúr,|| Kúnch¶ and others from Lachman Singh. The same course he hoped would be pursued in respect of Kálpi,** Jalálpur,†† Sahendáh,‡‡ and Maudah.§§ All these orders were no more than idle threats which were never to be enforced.

Muhammad Khán was now directed to proceed to court with no more than five hundred men, leaving Káim Khán in charge of the rest of his

* p. 465, line 4.—Grant Duff (p. 227), makes the Jaitpur affair follow the appointment to Málwá, but there can be little doubt from the local histories, confirmed by the "*Siyar-ul-Mutákhharin*" and the "*Tárikh-i-Muzaffari*", that Muhammad Khán received the Málwá appointment *after* he had been unsuccessful in Bundelkhand and had escaped from Jaitpur. I also doubt the correctness of the date 1732 in the *Gaz. N. W. P. I.*, 27. On p. 29, the year 1738 is given, which must be wrong: on p. 426, the date is 1731. On p. 545, Daulat Khán's death is given as having taken place in 1730 instead of 1720.

† In the Hamírpur District, Parganah Jalálpur, about 34 miles S. of Hamírpur.

‡ Query. Oráí, in the Jalaun District.

§ In the Jalaun District. See *Gaz. I.* 191. Now in Parganah Madhugarh.

|| Query. In Parganah Madhugarh, Jalaun District.

¶ In the Jalaun District.

** On the Jamna in the Jalaun District.

†† In the Hamírpur District.

‡‡ This is I fancy some place in the Hamírpur District and not the parganah of this name in Bánda.

§§ Hamírpur District.

army. He replied that he had got as far as Jalálpur on his way home, but was forced to stop owing to the disturbances raised by the troops, to whom more than one *kror* of rupees was due. Before, while the fighting was going on, no other thought could find place, night and day they were occupied with plans of resistance. But from the day of arrival at Kharela* and Moth and the junction with Káim Khán, they had resorted to every kind of violence in demanding their pay, and in requiring food for the time being. Their demands were made morning, noon and night, so that the Nawáb could neither eat nor sleep. He was driven to his wit's end, and death was better than such a life. He begged, therefore, that to content them, a portion of those two lakhs a month might be paid, which had been promised to him before he crossed the Jamna; or that to silence them a deed for Allahábád might be granted, with assignment (*tankhwáh*) on the maháls recovered from the enemy in Bundelkhand, and a *sanad* for the Sarkár of Ghorát† in the name of Káim Khán, from the year of the campaign against Sayyad 'Abdullah Khán (1721), when a petition, with order granting this Sarkár, was despatched to Daler Khán. He also demanded a *sanad* in favour of another son, Akbar Khán, for the *faujddári* of Parganah Irichh.

We next find the Nawáb reporting that the whole of the men had crossed the Betwah, they would speedily reach Kálpi, and commence to cross the Jamná, there being sixteen boats, large and small. Again Muhammad Khán reiterates his complaints. He accuses the courtiers of making him out a traitor and a rebel. Notwithstanding all the services he had done, the two lakhs a month had not been paid. Káim Khán had recently raised a great army; His Majesty could not have reflected where the money was to come from. Did he think Káim Khán knew alchemy, or could unearth hidden treasure? Had any one else raised an army at such a juncture, he would have been bountifully rewarded. Now the Nawáb's companions-in-arms received word that their *tankhwáhs*, granted in the Emperor Farrukhsiyar's time, had been resumed. This was most unjust.

If the Emperor should deign to redouble his ancient favours, then Muhammad Khán could continue his service. If not, he would draw on the garment of resignation and withdraw from public life, or if desired would proceed on a pilgrimage to Mecca. He himself was much cast down, but what he writes is for the satisfaction of his troops, to whom all his letters were shown. Although their pay was so greatly in arrears they would not, out of respect to his fellow clanship, prevent his journey to court. He felt much annoyed at the report spread that he did not intend to present himself, and he invoked the wrath of God on the men who made such unfounded statements.

* Parganah Jalálpur, Hamírpur District.

† See article *Ghord* in Elliot's Supp. Glossary, p. 391.

Again, in acknowledging a fresh order to attend court, Muhammad Khán goes over the above points once more. The Jamna was crossed on the return march apparently on the 11th Rabi' I. 1142, (23rd Sept., 1729). The river was in flood but the men were to cross on boats. His chief leaders were unprovided with horses, having just come out of a long campaign, and the strings of horses for sale not having yet arrived, they had not been able to mount themselves. On his arrival at court Muhammad Khán hoped that Roshan-ud-daula* would become security for him, and procure for him *sanads* in Káim Khán's favour for the zamindari and *faujdári* of Sarkar Ghorá. Pir 'Ali Khán, his agent at court, still held the order by which His Majesty had before granted them to Daler Khán. Nor had any reply to his request for the *faujdári* of Irichh been forwarded.

Muhammad Khán seems at length to have reached Court. The next eleven months (Oct. 1729—Sept. 1730), we can presume were spent in urgent repetition of the oft-told story of his wrongs. The *Siyar-ul Mu-tákharín* states† that his removal from the Allahábád Subah was caused by his failure in Bundelkhand. This does not seem quite correct for, if the *Tabákirat-un-Názirín* is to be trusted, the appointment to Allahábád was not conferred on Sarbuland Khán, Mubáriz-ul Mulk, till 1144 H. (July 1731—June 1732). Before this Muhammad Khán had been restored to favour, and his *sanad* for the Nizámat of Málwá is dated the 17th Rabi I. of the 12th year (1143 H. = 19th Sept. 1730). The removal from Allahábád in 1144 H. is, therefore, more probably to be attributed to some ill-feeling raised by Muhammad Khán's dealings in Málwá, where he was then present.

A characteristic anecdote, relating to this period, is told in the *Sharáif-i-Usmání*.‡ When Muhammad Khán reached Kanauj on his return from Bundelkhand, Rúh-ul-Amín Khán Bilgrámi, one of the leaders who had enlisted under Káim Khán's standard, introduced to the Nawáb the *kázi* of Bilgrám, Muhammad Ahsán, whose *jágirs* had recently been resumed by Burhán-ul-Mulk. The Nawáb promised to use his good offices with the Emperor; and the *kázi* followed him to Delhi. The empire was then in all its glory, and the saying was quite true that the Emperor of Hindustán lived like a God upon earth.

On his arrival at Delhi, Muhammad Khán at his first audience demanded the Subah of Allahábád; but the Emperor made the excuse that to give it then was not convenient. Immediately on hearing this answer, Nawáb Muhammad Khán stretching forth his hand took two-folded *pán* leaves

* Bakhshi-ul Mamálik, Roshan-ud-Daula, Zafar Khán Bahádur, Rustam Jang.

† p. 465.

‡ The *Sharáif-i-Usmání* was written in 1188 H. by Ghulám Hasan, Sadíki, ul-Farshúri, Bilgrámi, poetically styled *Samín*.

from the Emperor's own *pándán*, and sat down on the spot where he had hitherto stood. Samsám-ud-daula Khán Daurán Khán turned to him anxiously, and exclaimed, "Nawáb Ghazanfar Jang ! what does this mean ?" Muhammad Khán replied, " While I was a servant I stood, from this day I leave the Emperor's service, why then should I stand any longer ?" The Emperor tried to pacify him, but all efforts were unavailing, and the same day he gave orders to pay off his troops. A quarrel then occurred between the Nawáb and Rúh-ul-Amin Khán about a balance of one lakh of rupees due by the latter, which he refused to refund. The *kázi* thus lost his protector, and the Nawáb departed for Farrukhabád.

From a passage in the *Inshá-i-Yár Muhammad*,* it would seem that at this period Akbar Khán, the Nawáb's son, acted as his deputy at Allahábád. In the course of a long account of the principal events of his life, Yár Muhammad speaks of leaving Bhagwant Ráe and coming with Naval Singh to attack some fort. Having failed in their object, they went to Allahábád. Naval Singh entered Akbar Khán's service, while Yár Muhammad, dismissing his followers, took refuge with a holy man named Khúbullah. Akbar Khán sent a mace-bearer for him, but he refused to go, as on that day he had lost a child nine months old. A disturbance took place, and Akbar Khán attempted to use force. The Patháns refused, however, to attack the house of a holy man. The reason of Akbar Khán's interfering seems to have been, that Sa'dat Khán Burhán-ul Mulk had sent a request for Yár Muhammad's arrest as a deserter. Akbar Khán did not succeed in arresting him, and a week after a *sanad* came from Sarbuland Khán, the new Subahdár, appointing Roshan Khán Turáhi to be his deputy.

The Campaign in Málwá.

On reaching Delhi in the latter part of 1729, Muhammad Khán seems to have entered into prolonged negotiations. He could not succeed, however, in retaining Allahábád, which was an easily held country (*be-khár*), but had to content himself with appointment to the Subah of Málwá, which had been ravaged by the Mahrattas, and was liable at any moment to be re-invaded. The *sanad* for Málwá is dated the 17th Rabi I. of the 12th year (1143 H. = 19th Sept. 1730), and is "*ba-mashrút, ba dastúr-i-ma'múl, hasb-ul-zimman.*"

Roshan-ud-daula it was, through whom the appointment was obtained,† and one lakh of rupees of the money advanced from the treasury was left in his hands. Of this sum two thousand rupees were paid as a *douceur* to the employés of the elephant stables, to facilitate the delivery of four elephants. The balance appears to have been appropriated by Roshan-

* p. 168, Calcutta, 1246 H.—1830-1.

† See as to his influence and his cupidity, *Seir-Mutaqharin I*, 264, 274. He died 14th Zi'l-haj 1148 H., do. p. 294.

ud-daula. A lakh of rupees was also promised to Kokah Jíú* in order to obtain a quick settlement of the claims for jágirs. The money to be advanced from the Treasury was at first fixed at sixty, and then fifty lakhs. Gradually the grant was reduced to a most insignificant amount, although Rájah Jai Singh Siwáo had received thirty-two lakhs for a two months' campaign.

When Muhammad Khán left Delhi, it was agreed by Amír-ul Umrá Khán Daurán Khán and Roshan-ud-daula that, on his arrival at Mathura or Akbarábád, the grants for his friends' jágirs and a *sanad* for the faujdári of Gwáliár should be delivered to him. He had reached Gwáliár, however, without these grants having been received, and Mangal Khán was still delayed at Court by the non-fulfilment of these promises. Mangal Khán's jágir of parganahs Mauránwah,† Sarsendi,‡ and Rahli,§ and the assignment on Ním Khár,|| had long been in the occupation of Burhán-ul Mulk. A settlement of this claim was urged, in order that the jágirdár might provide his equipment.

The other jágirs asked for were as follows: ten lakhs of *dám* for Mangal Khán from Hísár¶ his native country; thirty lakhs of *dám* for 'Abd-un Nabi Khán from parganah Aunth** which was held by his father entirely in jágir; ten lakhs of *dám* for Shekh Beche on parganahs Shergarh†† and Thána,‡‡ the jágirs of his family; five lakhs of *dám* for Sayyad Sharif 'Alí Khán on Kanauj§§ his native country; fifteen lakhs of *dám* for Sayyad Ja'far Husain Khán on Sháh-púr;||| ten lakhs of *dám* for Kále Khán and Shuj'at Khán from Budáon;¶¶ five lakhs of *dám* for Diláwar 'Alí Khán Aurangábádi on Karnál,*** the parganah having been held by his ancestors in jágir; five lakhs of *dám* for Mustafa Khán from Mustafábád†††; five lakhs of *dám* from Jhúsi‡‡‡ and five lakhs from Cháil§§§

* A favourite mistress of Muhammad Shah's, who was intrusted with his private signet. Seir Mutaqharin I, 264.

† Unao district, about 30 miles S. of Lakhnau.

‡ In the Lakhnau district, written generally Sasendi—it lies 16 miles S. of Lakhnau.

§ I fancy this is in the Faisábád district—see Elliot's Supp. Glossary, p. 337.

¶ In the Sitápur district, 18 miles S. W. of Sitápur.

¶¶ West of Delhi.

** I have not traced this parganah.

†† This might be the Shergarh in the Mathura district.

‡‡ Possibly this is the Thána Farída in the Aligarh district.

§§ In the present district of Farrukhabád.

||| In the Cawnpur district.

¶¶ In Rohilkhand.

*** North of Delhi and west of the Jamna.

††† In the Mainpuri district.

‡‡‡ In the Allahábád district.

§§§ In the Allahábád district.

for *Sadákát Khán*; and five lakhs of *dám* for *Haidar 'Ali Khán* from *par-ganah Akrábád*.* The Nawáb's agent was instructed not to take *siáhas* (collection accounts) for these allowances unless they were without the condition "*páe-báki*."

On the 5th *Jamadi I.* of the 18th year (1143 H. = 5th November, 1730), *Muhammad Khán* writes from *Agra* that, of the sixty cannon ordered to be delivered from the fort, the commander (*kila'dár*) had made over no more than twenty-nine. Although there were two thousand cannon in store, they offered guns, broken and useless, carrying only a shot of two or three *pyce* (*falús*) weight and without *pallah*. The Nawáb says he might as well take *jazáil* (swivel-guns) at once. Such as they were, they had neither carriages nor bullocks, and *Muhammad Khán* was fain to take them as they were. His agent was told to get an order at once from the *Mír Atash* to deliver guns carrying shot of from one seer to three seers weight. With whatever artillery could be procured he intended to start.

As the large cannon given by the Emperor and brought from *Delhi* was defective at the breach, and the other formerly with *Nijábat 'Ali Khán* had been sent back to Court, a request was made for a large cannon carrying a ball of fourteen to fifteen seers, with two others somewhat smaller. These could be delivered from the forts of *Akbarábád* or *Gwáliár*, where there were large guns in store.

At *Akbarábád* some three to four hundred troopers presented themselves daily to have their horses branded. On entertainment half a month's pay and a little more for necessaries was advanced to each man. A force of 8,200 horse and 2,500 foot was collected. It was made up as follows: There were 500 horse and 1000 foot under *Muqím Khán*, 400 horse and 700 foot under *Dáúd Khán*, 600 horse and 600 foot under *Sa'ádat Khán*, and 200 foot under *Bakhtáwar Khán*; *Allahyár Khán* and others, *Dilázáks* of *Dholpúr Bári*, had brought more than 2000 horse. There were 500 horse under *Sháistah Khán*, *Misri Khán*, *Khudádád Khán*, *Muhammad Khán* and others, seven leaders from *Firúzábád* and *Shikohábád*. *Fath Khán Yusufzai*, *Ghairat Khán* and others came with about 200 horse: and the same number was sent by *Ráe Har Parshád*, 'Amil of *Rájah Jai Singh Sawáe*, under their *Chaube* leaders from *Mathura*. Besides the above there were some 2000 horse in small parties from *Mau*, *Sháhjahánpur*, *Sháhábád* and *Katahr* generally. All these were in addition to the men brought from *Shahjahánábád*. Nawáb *Roshan-ud-daula* had also promised to aid with a corps of 500 horse and 1000 foot of *Rúmíis*, *Arabs*, and *Habshis* in his pay.

'Umr Khán,† *Daler Khán*,‡ and *Yár Muhammad Khán*, son of *Dost*

* In the *Aligarh* district.

† *Faujdar* of *Mándú* near the *Narbada*.

‡ Apparently of *Korwáe* near *Sironj*. *Dowson's Elliot*, VIII, 58.

Muhammad Khán,* and the other chief soldiers of Ujain, Narwar and Sironj, reported that they had ready more than twenty thousand men. They were ordered to join with them at Narwar† and Kálábágh.‡ If they had been sent for to Gwáliár, two months advances would have been asked for, and the whole of the grant from the Imperial Treasury exhausted before leaving Gwáliár. Muhammad Khán endeavoured to make the money last as far as Ujain, that is for the succeeding two months.

At length on the 6th Jamadi I. 1143 H (6th November, 1730), the army was set in motion, and leaving Akbarábád it encamped at Jájau on the Bán or Utangan river, nineteen miles south of that city. The next morning, the 7th (7th Nov. 1730), a march was made and the army stopped at a short distance from Dholpúr. Mukím Khán, Dáud Khán and Sa'dat Khán with the artillery crossed at once. On the 8th, the crossing of the Chambal had not been effected by the rest of the army, the river not being then fordable, while the boats were few and small. On the 9th, Muhammad Khán crossed and the camp followed. Thence with one night between they reached Gwáliár.

From Gwáliár Muhammad Khán reiterated his request for the fauj-dári of that place. Without such a hold over them no hearty aid could be hoped for from the Rájahs and others ordered to serve under him. It was promised to him before he left Delhi, but having got rid of him from Court, the ministers paid no heed to his remonstrances. Chattar Singh of Shiupuri§ and Kaláras|| learning that the *sanad* for Gwáliár had not arrived, collected men and began fighting Khánde Rám whom he had ejected from the fort of Bajaur.¶ The mercenaries had thus found service near their homes and went to join the combatants. If once these Rájahs and the mercenaries knew that Muhammad Khán had been made faujdár of Gwáliár, they would no longer seek service except under the government of their country.

Rájah Udait Singh of Orohha, his son Kunwar Bahádur, Ráo Rám Chand of Datiya, Chattar Singh of Shiupuri and Kaláras, the Bhadauriya Rájah, Rájah Durjan Sál of Chanderi and others had been directed from Delhi to place themselves under Muhammad Khán's orders. Sayyad Nijábat

* The founder of Bhopál. Dowson's Elliot, VIII, 57, 59.

† About 44 miles south of Gwáliár.

‡ About 102 miles S. of Gwáliár, 4 miles N. of Sarée Nau, and 16 miles N. of Sádhaura.

§ I take this to be the Sipri of the maps, 67 miles S. of Gwáliár, but there is a Shiupuri 97 miles S. W. of that place.

|| About 74 miles S. of Gwáliár.

¶ Or perhaps the Pichor in Lat. 26° 57'; Long. 78° 27' in Gwáliár territory, some 25 miles S. E. of Gwáliár on the left bank of the Sind river.

'Ali Khán, faujdár of Irichh,* was also told off; and on the part of Máhárájah Abhai Singh of Márwár, Jai Singh and Mán Singh Ráthor of Ratlám, about fifty miles west of Ujain, were deputed. The Máhárána of Udepúr reported that he had sent Ráo Mukráj Dhabhai from Udepúr towards Mandeshwar† with troops and artillery.

While Muhammad Khán was still at Gwáliár, an urgent letter came from Khán Daurán Khán. As the Mahrattas intended to cross the Narbada, it was necessary that, without further delay, the Nawáb should proceed by forced marches, not even staying at Sironj. He should get to the river in time to oppose the crossing. Four months had already been wasted. On receipt of these orders, Mukím Khán was sent on in advance, and after some opposition made good his way to Sironj. Sa'dat Khán was sent to Mandeshwar, and Daúd Khán to Sárangpur ‡

When Muhammad Khán reached Sádhaurah,§ eighteen miles beyond Saráo Nau|| to the south in the direction of Ujain, a letter written in Jamadi II, 1143, (Dec. 1730), was received from Asaf Jáh Nizám-ul Mulk.¶ This noble, after congratulations on Muhammad Khán's appointment, proposed that they should meet at the Narbada to concert common measures against the opponents of Islám. Nizam-ul Mulk had crossed at Fardánpur** in order to quell a revolt in Laklána,†† and the opportunity would not recur as he seldom visited that part of his Subah. Muhammad Khán accepted the proposal, saying, that as the Mahrattas at the instigation of the Hindus of Hindústán intended to ravage the whole of Málwá, he trusted that Nizám-ul Mulk as the champion of Islám would stop them at the ferries on the Narbada.

On the 17th Rajab, 1143 H. (15th January, 1731), Muhammad Khán reached Sárangpur, about fifty miles from Ujain. Hearing of his approach, Mulhár Holkar, who with twenty thousand men was plundering the country, sent his baggage and heavy stores across the Narbada, and lightly equipped continued the investment of Sháhjahánpur, a town about eleven miles

* Now in the Jhánsi district.

† About 78 miles N. W. of Ujain.

‡ About 52 miles N. E. of Ujain.

§ Lat. 24° 37'; Long. 77° 39'.

|| Lat. 24° 48'; Long. 77° 39'.

¶ The only other letter of his to Muhammad Khán preserved, of a date prior to this one, is a report of his fight with Ráo Bhím Háda of Kotah, Rájah Gaj Singh Narwari, Diláwar Khán, Sayyad Sher Khán, Bábar Khán, Dost Muhammad Khán and Farhat Khán. It took place on the 13th Sha'ban. The year 1796 S. (1719 A. D.) is given in Tod, II, 469.

** Dowson's Elliot, VII, 498. A pass half way between Aurangábád and Burhánpur.

†† This place is not traced.

south-west of Sárangpur and about twenty-one miles north-east of Ujain.

The day that the Muhammadans drew near to Sárangpur, about an hour to sunset, while the men were still scattered on the line of march, the enemy suddenly appeared and showed fight. The war howdahs (*amári*) having been taken off, Muhammad Khán got into a palki and started at the head of a small force. The enemy, as their custom was, spread out and came on in all directions. Soon, however, they fled "like crows on seeing a bow," six of them were killed, their heads brought in and their horses captured. Night coming on they were not pursued.

On the 19th Rajab, 1143 H. (17th January 1731), the army reached Sháhjahánpur from Sárangpur: and the next day they encamped near the village of Talodri. In the afternoon the enemy made their appearance and troops were moved out against them. On Muhammad Khán's mounting and advancing, they gave way and were followed for three *kos*. Seventy of them were slain by sword and spear. The heads and horses were brought in, with six or seven prisoners. Owing to the darkness the pursuit was stopped at one watch of the night, and the troops returned to camp. The people of the country were so frightened, that the Mahrattas left only one trooper in a town or village to collect their demands. After Muhammad Khán's arrival, however, and their defeat, the Mahrattas themselves were glad to withdraw beyond the Narbada. Ujain *Dár-ul-fath* was reached on the 22nd Rajab, 1143 H. (20th January 1731).

Spies now brought word that the Mahrattas, leaving their baggage on the other side of the Narbada, were coming across to plunder the towns and villages of Málwá. They were reported to have invested the town of Boláe.* Accordingly on the 11th Sha'bán, 1143 H. (8th Feb. 1731), Muhammad Khán set up his tents and took the field again, turning towards Dhár.† Of all the contingents, that of Kunwar Bahádúr of Orchha was the only one which had arrived.

While Muhammad Khán went towards Dhár, he sent his son, Ahmad Khán, with Mukím Khán, Yár Muhammad Khán, and Dáler Khán at the head of 12,000 horse and 20,000 foot to deal with Holkar in the direction of Sárangpur and Sháhjahánpur. The invaders were driven away towards Mandeshwar, after they had plundered in parganah Boláe. Then Yár Muhammad Khán made friends secretly with Mulhár Holkar, and the two chiefs exchanged turbans. As a pretence the army was taken towards Máhidpur,‡ and the traitor told Holkar that the country of Ujain was left

* About 47 miles N. E. of Ujain and 14 miles S. E. of Sháhjahánpúr.

† About 50 miles S. W. of Ujain.

‡ 20 miles N. of Ujain and 38 miles W. of Sháhjahánpúr.

defenceless and could be plundered. Should he fail, however, he could then turn on Muhammad Khán in the direction of Dhár. Mulhár, persuaded by Yár Muhammad went to Ujain, and set fire to two or three houses in Rakábganj. The naib (Muqim Khán) came out to meet the Mahrattas, and after some fighting they made off in the direction of Muhammad Khán. A story that they had plundered some merchants near the town of Andru* in the *ta'luka* of Nand Lal Sandloi† was untrue.

Meanwhile Muhammad Khán had reached Dhár on the 17th Sha'bán, 1143 H. (14th Feb. 1731). From early morning of the 22nd (19th Feb. 1731) many Mahrattas appeared in the vicinity. The Muhammadans killed several, cut off their heads and brought in their horses. In the afternoon the contest ceased. Next morning Holkar with his army appeared in sight, and made a first attack on Sulaimán Khán who commanded three thousand horse. The attack was repelled. Then Ma'zum Khán with 1000 horse on the right, and Muhammad 'Umr Khán, faujdar of Mándú, on the left, hastened forward; and Muhammad Khán himself advancing quickly, the enemy gave way. Several leaders and some fifty troopers were left on the field, besides those wounded. The Muhammadan loss was twelve killed. Pursuit was made for two *kos*, and they returned to their tents when one quarter of the night was past. These contests went on for about ten days to the end of Sha'bán (26th Feb. 1731).

For some time no word had been heard of Nizám-ul Mulk's departure from Burhánpur.‡ At length on the 25th Sha'bán (25th Feb. 1731), a letter was received, and Muhammad Khan determined to set out for the Narbada. He had also been delayed by the non-arrival of Dáler Khán. The latter now wrote that Yár Muhammad Khán had gone off to his home, taking with him his friends and some men. Dáler Khán announced his own intention of joining if he were waited for. Accordingly on the 28th he arrived, and on the 29th Sha'bán (26th Feb. 1731), they set out for the Narbada by double marches. Other reasons for the delay may have been, that Muhammad Khán was not able to move without reinforcements, or that, to save his dignity, he did not wish to move more rapidly than he could help to the place of rendezvous with Nizám-ul Mulk. The Mahrattas had now been expelled for a time from Ujain, Mandeshwar, Dhár and Depálpur,§ and their new forts on the Narbada had been levelled.

A second letter came now from Nizám-ul Mulk referring to his having crossed the river at Fardánpur on the 20th Jamadi II, 1143 H. (20th Dec.

* Query. The same as Indúr.

† Or perhaps *Mandloi*—See No. 7 of Index to Vol. III, of Aitchison's Treaties, ed. 1876.

‡ On the north bank of the Tápti, 132 miles S. E. from Ujain. Thornton, 141.

§ About 28 miles S. W. of Ujain.

1730), to suppress the rebellion in Zila' Laklána.* He reports having heard that Báji Ráo had reached Sultánpur† and Nandurbár‡ on his way to Gujrát. It was thought that as Kanhaya Bánd and Pilá Gáekwár were opposed to him about the *chauth* of that Subah, he must intend to eject them; and being taken up with fighting among themselves, they would not find the time to invade Málwá. Spies had, however, since brought intelligence that Báji Ráo's brother was marching by way of Navápurah§ to Surat and Gujrát; meanwhile Báji Ráo, leaving Sultánpur and Nandurbár, would make for Málwá *via* Ghargún|| His brother would then come through Dohad¶ to join him, and they would unite to expel the thánas of Kanhaya Jí and Pilá Gáekwár from Málwá. Kanhaya Názar, Pilá Gáekwár and Udá Punwár had opened negotiations with Nizám-ul Mulk, and he advises Muhammad Khán also to receive their overtures and try to bring them over.

On the 20th Rajab (18th Jan. 1731), Nizám-ul-Mulk wrote again from Gálnah** that as soon as Muhammad Khán's letter was received on the 17th Rajab (15th Jan. 1731), he had started for Burhánpur. He trusted that Muhammad Khán would make no delay, so that they might meet and discuss plans together, for "*Daulat ham 'z itifák khezad*" (Union is strength). Another letter tells Muhammad Khán that Rájah Abhai Singh was about to make peace with Báji Ráo. Pilá Gáekwár, Kantá Bánd, Udá Jí Punwár and Anand Ráo had, however, entered into the closest relations with Nizám-ul-Mulk: and acting with them was Tirnek Ráo Pahárya, son of Khandu Jí, who had lately succeeded his father. The troops of these allies might amount to some twenty thousand horse. Chimna, brother of Báji Ráo, had 9000 horse, and would advance by the pass of Nánábyári, which is towards Gujrát. Báji Ráo was reported to have 3000 or 4000 horse. Holkar with some 3000 men had gone towards Málwá.

On Friday the 1st Sha'bán 1143 H. (29th Jan. 1731), Nizám-ul-Mulk, who was near Dhámanganw,†† acknowledged the receipt of Muhammad Khán's letter reporting his arrival at Sádhaurah. As Dhámanganw was

* Or Laklába.

† About 5 miles from the north bank of the Tápti, and 30 miles S. of the Narbada, and 102 miles W. of Burhánpur.

‡ About 10 miles S. of the Tápti and 30 miles S. W. of Sultánpur.

§ About 12 miles S. of the Tápti, 86 miles S. W. of Nandurbár and 165 miles W. of Burhánpur.

|| On the Kundi river, 25 miles S. of the Narbada and about 55 miles N. W. of Burhánpur.

¶ On the boundary of Málwá and Gujrát, 100 miles W. of Ujain. Thornton 284.

** About 120 miles S. W. of Burhánpur, 165 miles N. E. of Bombay, in the Khándesh District. Thornton, 433.

†† About 70 miles S. W. of Burhánpur.

counted as thirty *kos* from Burhánpur, Nizám-ul-Mulk hoped soon to reach the Narbada.

He does not appear to have hastened himself much, for it was not till Sunday, the 17th Sha'bán (14th Feb. 1731), that leaving behind his large guns, artillery and heavy equipage he started from Burhánpur. On the 22nd (19th Feb. 1731), he was at Sálganw, a distance of twenty-two *kos* from Burhánpur, and intended to march *vid* Ghargún to the Narbada. Muhammad Khán was recommended to comè by the pass (*kanal*?) of Naubahra, which was the usual route. On Saturday the 23rd, Nizám-ul-Mulk was within twenty *kos* of the ferry of Akbarpur* on the Narbada, the advanced tents would go on next day, and on the 25th (22nd Feb. 1731), he hoped to reach Akbarpur. The darogha, however, came back and reported that Muhammad Khán was still above the gháts. Although professing to be burning for an interview, Nizám-ul-Mulk thought that his dignity required him to divide the remaining distance into two marches. Muhammad Khán, in answer to one of the letters, had complained that the allies Kanhaya Jí, Chimná Jí and others had sent him no men. Nizám-ul-Mulk reassures him by pointing out that they were far away near Mándavi† in the *zila'* of Surat. Some further time was occupied by Nizám-ul-Mulk going off to take a fort, and the desired interview did not take place till some time afterwards. We have no report of what took place, further than that the two Subahdars agreed to act in concert to put down the Mahrattas. Muhammad Khán in his report to the Emperor is loud in his praises of Nizám-ul-Mulk as an obedient and dutiful subject of the State. Muhammad Khán finally left Akbarpur on the 1st Shawwál 1143 H. (29th March, 1731).

Nizám-ul-Mulk went from Akbarpur to reduce the forts of Rájaur and Nadáwáli, the residence of Mohan Singh on the other side of the ferry. By the 4th Shawwal (1st April, 1731), the besieged were suing for terms, the fort was to be evacuated and made over to Nizám-ul-Mulk's envoys. This noble was, however, threatened by a new danger, which hastened his departure from that part of the country. He heard that Báji Ráo leaving the Narbada had gone towards Surat and Nurpurah. This made it necessary for him, he said, to provide without losing a moment, for the safety of Aurangábád and other parganahs and important forts. His own spies confirmed the news, saying, that they had left during the night, when it was said that Báji Ráo would march next day. Chimná Jí Dámodar having been released, had reached Dobhoi, twenty miles south-east of Baroda; and he had written to his son that Báji Ráo had moved and gone towards the Ghát of Nánabyári.

* About 35 miles S. of Indúr and 40 miles S. E. of Dhár.

† On the Tápti about 32 miles east of Surát.

The explanation of Nizám-ul-Mulk's anxiety and haste would appear to be that he had heard of the defeat, on the 1st April 1731, between Baroda and Dobhoi in Gujrát, of his allies, Piláji Gáekwár and others. Udá Jí and Chinná Jí Pandit were taken prisoners.* This defeat rendered futile all the negotiations for a general alliance between the two leaders, Muhammad Khán and Nizám-ul-Mulk. But Muhammad Khán was benefited indirectly, for Nizám-ul-Mulk was forced to take the field openly against Báji Ráo, thus for one season averting from Málwá the full force of the Mahratta depredations. Báji Ráo was forced to remain in the Dakhin on the defensive.

Grant Duff† speaks of no open fighting between Báji Ráo and Nizám-ul-Mulk from April 1731 till the time of concluding a treaty in August of that year. Nizám-ul-Mulk, however, in the last but one of his letters to Muhammad Khán, details what he calls his victories over Báji Ráo. The latter had invested Baroda which was occupied by men of his own nation. But hearing of the approach of the Muhammadans, the Mahrattas raised the siege and made off towards Surat, and when they thought they were at a safe distance, they turned off to plunder parganah Auklah.

Hearing of their movements, Nizám-ul-Mulk says, he left the ferry of Akbarpur and passed near the fort of Mándó, sending his heavy baggage and large guns to Burhánpur. Making forced marches he soon reached the river, where finding much of his artillery in his way and difficult to get across, he left it behind. Then redoubling his haste he reached the port of Surat, and for the third time left more of his *impedimenta* at the village of Malwá. They pressed on though troubled by hunger and thirst, carriage became very difficult to procure, and for two or three days deaths were frequent. For most of the time they passed through desert and wilderness. After crossing the ferry they drew near to the enemy and caught them unawares. They took to flight, but the Bhils and Kolis captured numbers of them, more especially at night when they had lost their way. The Muhammadan army had now come to the shores of an arm of the sea. This gives an opening to the Persian scribe to descant on serpents and the rod of Moses, Pharaoh and Pharaoh's host.

They had passed through the deserts and unoccupied country of Khán-desh, Surat, and Kokan, where from the thickness of the woods, it is difficult to force a practicable route. When they reached Surat the enemy were driven towards Daman,‡ which was under the sway of the Farangi, and thence to the Kokan, the western boundary of the Dakhin. They then were caught at a place where you go from the Tal Kokan to the country

* Grant Duff, p. 225.

† p. 225.

‡ On the coast, 55 miles S. of Surat.

above the ghát. Thank God! the Subah of Gujrát was freed from Báji Ráo, Málwá was no longer in danger, and the fort of Surat, which is the gate of God's house (Mecca), had been recovered from the infidel.

While Muhammad Khán had gone to meet Nizám-ul-Mulk, he had sent his son, Ahmad Khán, with Mukim Khán to the east to reduce Kálkli and Chakaldah* two forts on the right bank of the Narbada, the head quarters of Udá Puñwár. Both were places noted for their strength, more especially Chakaldah, which had four forts and deep ditches, with jungle on three sides and the Narbada on the fourth. As the garrisons offered a stubborn resistance, Muhammad Khán himself determined to march to his son's aid; and leaving Akbarpur on the 1st Shawwál 1143, (29th March, 1731), in two days he arrived near Kálkli. By an effort this fort was taken, and the next day they proceeded to invest Chakaldah. After six hours' fighting the besieged were overcome so far that they sued for terms. Three thousand souls, men and women, submitted and were set at liberty. The walls, ditch and bastions were razed to the ground, and gold keys as a token of the capture were forwarded to the Emperor. While the Muhammadans were encamped near Chakaldah, Báji Ráo was plundering in the direction of Jábwah,† while Rájah Abhai Singh was opposing him. Muhammad Khán hoped to march that way after clearing the country and destroying the forts.

This capture of Udá Jí's forts provoked a strong remonstrance from Nizám-ul-Mulk. He had told Muhammad Khán that Udá Jí and his friends were at enmity with Báji Ráo. To secure success in the negotiations with them, they must be treated with consideration. If there were any of Holkar's men in the forts, then with God's aid they should be seized. Otherwise it was highly advisable to postpone any attack, and to put these men out of humour for a trifling cause was undesirable. The year before, when Ráj Adhiraj (Raj Jai Singh Sawái of Jaipur) had cleared out the forts, he could not maintain himself, and the former owners re-occupied them. Former Názims had not troubled themselves about the place, which was at a distance from Ujain and in one corner. To retain it would give great trouble and bring little profit. Above all, at such a time they should not be interfered with, and the Emperor's advisers knew nothing of the state of affairs. The break up of the confederacy by the defeat on the 1st April, 1731, rendered these remonstrances of little weight, and before the letter was received the forts had been taken and levelled with the ground.

Muhammad Khán turned against the fort of Kónsi, the home of

* Chakaldah is about 110 miles S. E. of Ujain, on the right bank of the Narbada, Kálkli has not been traced.

† There is a Jabwah 100 miles W. of Ujain.

Máwáe Bhilán,* which possessed four strong citadels connected with each other, and surrounded by a deep ditch filled with water. On all sides were steep hills and inaccessible ravines. Fighting with muskets, rockets, arrows, spears, swivel-guns (*rahkla*) and cannon went on day and night. The first entrenchment was stormed and the garrison asked for terms, which were granted. The fort was not dismantled, as it afforded a protection against the inroads of the Mahrattas.

While Muhammad Khán was engaged with these forts, he heard that Mulhár Holkar was plundering in the country of Rámpura† and Mandeshwar. He was opposed by the Imperial troops in the neighbourhood of Sárangpur, Sháhjahánpur and Dhár, and he went off for a time into Jaipur territory. Meanwhile Anthú, another Mahratta leader, had ravaged the country round Kánth. The two leaders then united with Maṭhwárah to trouble the road between Paráth and Sháhjahánpur. Reports of these things came from Sheikh Amán-ullah, manager of Sháhjahánpur, the *jágir* of Nizám-ul-Mulk, and from Dáud Khán, chela, Náib Faujdár of Sárangpur. At this time too, Fath Singh Wáulbánsi and other Mahrattas had crossed the Narbada, and unopposed at any point by any of the Hindustani armies, had plundered the country of Mándú‡ returning home by way of Bárigarh.

Muhammad Khán returned and reached Ujain on the 13th Zi'lka'd of the 13th year, (9th May, 1731). He complains that besides himself no one else was heartily desirous of repelling the Mahrattas. To add to his difficulties, his troops now mutinied and demanded their arrears of pay. He found some means or other to content them for the time. Then Rájah Kishor Singh, son of Rájah Ajit Singh, was despatched to parganah Muhammadpur, and Sayyad Fath 'Ali Khán Bárha to parganah Bhadáwar, to protect the towns and bar the way to the enemy; while Anwar Khán was placed in Ujain itself, and Muḳim Khán had orders to drive off any of the enemy who approached that place. When these dispositions had been made, Muhammad Khán on the 19th Zi'lka'd (15th May, 1731) left Ujain.

Máharáo Durjan Sál of Koṭah, Kuṇwar Bahádur of Orchha, and the sons of the Rájah of Chanderi were asked to take some of Muhammad Khán's troops and attack Anthú, who was reported to be then near Kánth at the head of one thousand men; and Mulhár, who had appeared again in the neighbourhood of Sárangpur. This request was refused.

On the 8th Zi'l Hajj (3rd June, 1731), Muhammad Khán was near Kánth. Anthú now withdrew. But next day, when the Nawáb reached

* Or perhaps Wámá Ráe Bhilán; or *Mawási*, the title generally given to the chiefs on the Narbada. (Malcolm's Central India, I., 516.)

† There is a Rámpura 40 miles N. E. of Mandeshwar.

‡ Near the Narbada about 60 miles S. of Ujain.

Sháhjahánpur, word came from Dáud Khán, náib of Sárangpur, that he would be overwhelmed by Mulhár unless he were reinforced at once. Forthwith, at midnight, the Máháráo, Kunwar Bahádur, and the sons of the Rájah of Chanderi having been appointed to lead the van, the army set out and reached Sárangpur, about nineteen miles distant to the north, at an hour and a half after sunrise. The troops were still on the line of march or engaged in crossing the river, when Holkar, Anthú and others suddenly appeared. The Muhammadans at once drew up and engaged them, the fighting going on till an hour before sunset. The Mahrattas then fled, and in the pursuit, which extended for four *kos*, many were killed. Muhammad Khán, with his men, was out till midnight conducting the pursuit and plundering the camp and baggage, called in the Mahratta tongue "*Paráo*." When the pursuers got near the town of Sundarsi, about twenty-three miles south of Sárangpur, a spy came and informed them that the enemy in their flight from the field, after resting a short time in Sundarsi, had resumed their route and were making for the Narbada, and must have gone already fifteen or twenty *kos*. The Muhammadans after a pursuit of ten to twelve *kos* returned to their camp.

Muhammad Khán speaks of having with him twenty thousand horse and twenty thousand foot. Night and day he was engaged in efforts to expel the invaders. On the other hand, the Názim of Gujrát (Hámid Khán ?) had only given cash, jewels, elephants and horses to Báji Ráo, while the *thánas* were still in the hands of Kantýá and Udá Puñwár. The Názim had never gone a *kos* from the city. In the dispute between the Názim and Mubáriz-ul-Mulk (Sarbuland Khán) he heard that in the first encounter the latter gained the advantage, but night coming on the pursuit was stopped, and next morning an arrangement was come to.

The Rájahs had throughout shown great reluctance to attend Muhammad Khán, Kunwar Bahádur of Orchha being the only one who had done any real service. Máháráo Durjan Singh of Kotah, and Ráo Matwárah now requested leave to go home, and threatened to go without it, if leave were not granted. They quitted the army on the 22nd Muharram, 1144 H. (16th July, 1731). From this defection others were disheartened, and a few days afterwards Kunwar Bahádur of Orchha with four or five hundred horse, and Jográj, son of Rájah Jai Singh of Chanderi, with forty or fifty horse marched away to their homes. Although, as Muhammad Khán says, the presence or absence of the latter was equally matter of indifference, still these defections were discouraging. The other Rájahs, Udait Singh of Orchha, Rám Chand of Datýá, Chattar Singh of Sháhábád, and the Bhadaurya Rájah, had paid no heed to all the orders and messengers sent to them direct from the Emperor. Nor had any attention been vouchsafed at Court to

Muhammad Khán's recommendation of Hindu Singh Chandela* for whom he had asked for the rank of *Sikhazári*, 2000 horse, a *jágir* of his native country, and restoration to his zamindari. If Hindu Singh were sent to Málwá, the Bhadauriya Rájah would no longer have a pretext for lingering at Kanauj (where he held the office of Faujdár).

After Mulhár and Anthú had recrossed the Narbada, Muhammad Khán went to extort his revenue from one Umán†; and in two marches having reached Rájgarh,‡ he defeated the zamindar referred to, and settled matters with him. Muhammad Khán then returned to Sironj. This place, which is about 136 miles north-east of Ujain and about 150 miles south of Gwáliár, he made his head-quarters, probably because it was further from the Narbada than Ujain, and nearer his line of retreat by Gwáliár to Hindustán. His foothold in Málwá was too precarious for him to risk being surrounded and cut off. He appears to have remained at Sironj during the rainy season of 1731.

The state of the Súbah was most deplorable. The whole country had been spoiled by the Názim and ravaged by the Mahrattas. It was entirely out of cultivation and uninhabited (*be cheragh*), nowhere was any crop to be seen, there was nothing but dry grass. The villages which were inhabited had been plundered by the Thákurs and burnt to the ground, the ravages of the infidel caused the country to be deserted. Only Rs. 5000 had been collected from Mandeshwar and Rs. 4000 from Sironj and Bhilsa.§ During the rains of 1731, Muhammad Khán made repeated reports of these facts, stating his want of money, the mutinous conduct of his troops, the impossibility of getting any revenue from Málwá, and the necessity for help in men and money. These urgent appeals were left unanswered.

His difficulties were further increased by the fact that Málwá, from one end to the other, was granted out in *tankhwa* to *jágirdárs*, who were backed up by Khán Daurán Khán and Roshan-ud-daula. These *jágirdárs* complained at Court of the slightest interference, but gave not the least assistance. Nowhere was there sufficient land left for the Subahdar to plant the sole of his foot, much less to use for a riding or hunting-ground. On the one side, from a tank which lies two and a half *kos* from Ujain, began the *jágir* of Burhán-ul-Mulk and others; and in another direction, from Fathá-

* Apparently Hindu Singh of Chachendi in the Cawnpur district. He was ejected from his estate in the tenth year by Burhán-ul-Mulk and Rájah Gopál Singh Bhadauriya. [Dowson's Elliot VIII. 46.]

† Or Admiyán.

‡ Long. 76°, 46' and Lat. 24°—32 miles N. of Sárangpur and 66 miles W. of Sironj.

§ About 44 miles S. E. of Sironj.

bád,* four or five *kos* from the city, the parganahs and villages were all in *jágir*. Rámpurah† was held by Rájah Jai Singh Sawái; Haif Ali Khán's *jágir* was Kankrál; Rájah Múlráj held Kadraulah in Dhámoni;‡ other portions of the Subah had been assigned to Nizám-ul-Mulk Asaf Jáh, to Nawab Kudsia,§ to Háfiz Khidmatgár Khán, Mukarrab-ul-hazrat Khákán, to Mír Husain Khán Kokah,|| to Sa'd-ud-din Khán Bahádur Mír Atash, to 'Ali Ahmad Khán, and to the eunuchs of His Majesty. Many of the agents of these grantees allowed their *ta'lukahs* to become places of resort for the Mahrattas, where the plunder from the imperial territory was stored. When any Mahrattas took refuge with them and a force was sent after them, the agents declared that there were no fugitives in their parganahs. If the army entered their lands, they then raised loud complaints of the damage. Thus everything had to be left in confusion, and it became impossible to re-settle the country.

The zamindars of Rámpurah were in league with Mulhár Holkar and helped to plunder the country. When the imperial army followed them up, Rájah Jai Singh Sawái remonstrated at Court, and Muhammad Khán was rebuked. In defending himself he gives an instance of what was done. Sítá Rám Nágar had been chief writer of the zamindars of Rámpurah till Ráj Adhiráj took possession. This man then became a jama'dár in the regiment of Mukím Khán. Having broken his leg, he was put on Mukím Khán's elephant, and the day the army left Bansilah he set out for his home followed by fifty or sixty men. Rájah Jai Singh Sawái's men were lying in ambush at seven or eight *kos* from Rámpurah. As he passed they stopped him and seized the elephant. They would neither return the elephant nor grant an interview to the Nawáb's messengers. Muhammad Khán exclaims how hard it is that Ráj Adhiráj, who held all Akbarábád and Ajmer, and had lately received the parganahs round the capital, should try to stretch forth his hand on Subah Málwá and intrigue there with the infidels.

As for Haif 'Ali Khán's *jágir*, it had been customary for the zamindar of Kankrál to pay *peshkash* to former názims; one lakh of rupees had been paid to Rájah Girdhar Bahádur besides four elephants. Now instead of injuring, Muhammad Khán had benefited the *jágirdár*. When Mukím Khán went there, he settled the zamindars' payment at a higher amount, collected the money, and remitted it to the *jágirdár*. The latter's Amil still retained possession of the *jágirs* of 'Abd-ur-razák Khán, Khwájah Munír

* About 12 miles S. of Ujain.

† There are several Rámpuraha, I suppose this to be the one 56 miles N. W. of Sironj.

‡ 69 miles E. of Sironj near Khimlása.

§ Mother of Muhammad Sháh.

|| Killed in 1149 H. in fight with Báji Ráo outside Delhi. Grant Duff, p. 236.

Khán and Ghási Rám. After settling Ujain, Muhammad Khán intended, he said, to go to Dhámoni to recover the *jágir* of Rájah Múlráj.

Seeing that no one in the Presence paid any attention to his representations, Muhammad Khán determined to leave a naib in his place and repair to Court. On his way, he resolved to settle Sháhábád* and Ranúdah,† the faujdári of which Rájah Chattar Singh had not yet relinquished, and he had also behaved badly to 'Atik-ullah Khán, naib of Muhammad Khán. This expedition put the finishing touch to the Nawáb's misdeeds, and no doubt formed one of the causes of his sudden recall.

Rájah Chattar Singh Narwari, who was specially recommended to Muhammad Khán by Háfiz Khidmatgár Khán as his "friend and companion", held the Sarkárs of Sháhábád and Ranúdah, to which Muhammad Khán had been appointed faujdár. His ancestral estates were in Shiupuri and Kaláras, and his country extended up to the neighbourhood of Sironj. He also held Narwar,‡ which for seven hundred years had never been in possession of the Hindus. Although he had been ordered to join he did not attend, he did not give up the *Sarkárs*, and nothing could be collected; at length he surrounded Sayyad Atik-ullah Khán, naib, and cut off his supplies. From his position in the line of Muhammad Khán's communication with Hindústán, he was able to give great annoyance. Narwar, "which is as a gateway sufficient for the passage of one man at a time", was the only route open to recruits; the road by Bhadáwar being closed by the Bhadauriya Rájah. Seven or eight times the men of Chattar Singh had murdered messengers at the pass of Narwar and had taken their letters. Only one pair of messengers, after giving up their letters, had escaped with their lives. To obviate this inconvenience, Muhammad Khán renewed his request that his son Akbar Khán might be made faujdár of Narwar and Bhadáwar. Or if that were not approved, some one of the Mughal party might be appointed to keep the road open. This request was refused on the ground that, Sháhábád having recently been taken from Rájah Chattar Singh, Narwar, his native country, could not be taken without any fault. As an alternative, the Nawáb urged that Chattar Singh's rank (*mansab*) and *jágirs* might be taken away, as a lesson to others who had failed to attend in obedience to the Emperor's orders. After writing to him in vain several times, Muhammad Khán decided to proceed to active measures against him.

About the commencement of his second year in Málwá (October—November, 1731,) Muhammad Khán marched to Saráe Nau about fifty miles north of Sironj, giving out that he was on his way to Court. On the 3rd Jamádi, I. 1144 H. (23rd October, 1731), the army surrounded the village

* About 90 miles N. W. of Sironj.

† About 68 miles N. of Sironj.

‡ About 44 miles S. of Gwáliár.

of Labkára. The villagers relying on the strength of their fort resisted and fought for three watches. At length they took to flight, and the small fort was carried by assault (*ba-sar-i-siwári*); many of the garrison were killed or left for half dead. The following day, an attack was made on Chándaur* where there was a strong fort, and the zamindárs were noted for their turbulence. Fighting went on all day, but at length this fort too was taken, and lives were lost on both sides.

The Muhammadans next went to Chargún, a fort on a high hill, surrounded by jungle, and with many outworks. Its defenders relying on their numbers took to the jungles and ravines. Fighting went on morning and evening for twenty-four days; till the enemy sued for and obtained terms. Thence the Imperialists turned to Bhándaur,† the stronghold of Kahri Singh, grandson of Chattar Singh. During the night Kahri Singh made off and his fort was taken. Two or three other forts were reduced in the same way.

The last place attacked was Sháhábád, Chattar Singh's place of residence, and declared, perhaps with some exaggeration, to be as strong as the fortress of Gwáliár. After some time had passed, Chattar Singh proposed to negotiate and Muhammad Khán tried to conciliate him. It was agreed that he should join with his troops. Intelligence, however, came of a fresh invasion under Báji Ráo. The night before the morning fixed for the march, Chattar Singh brought forward claims for pay. These were all agreed to. During the night, however, Chattar Singh absconded and made off to his own country. As the danger pressed, Muhammad Khán had no alternative but to return to Sironj.

The Mahrattas were reported to be in force in the country of Khan-ján and Umán and Sewni,‡ and though in the Dakhin they talk of the "*chauth*," i. e., one-fourth, yet they took from the towns and villages more than three shares both in Málwá and Gujrát. As in this year (1144) they felt quite safe on the side of Gujrát, they had brought nearly 100,000 horse into Málwá. Fath Singh, an agent of Sáhu,§ Pílá Jádón, Anand Ráo, brother of Udá Punwár, Sámájí and others, with more than thirty thousand horse, posted themselves near Khimlása, on the east of the town of Sironj towards Chanderi, at a distance of seven *kos* from Sironj. Chimná, Báji Ráo's brother, Mulhár and others with a force of thirty thousand horse were in the

* Perhaps the Chandoria of the Indian Atlas—Sheet 52 N. E. in Lat. 24°, 59½' Long. 77°, 35½' to the N. W. of Saráo Nau.

† Perhaps the Bhadaura of the Indian Atlas—Sheet, 52, N. E. Lat. 24°, 48'; Long. 77°, 27½', about 13 miles N. of Gúnah.

‡ Sewi, or Sewli.

§ I cannot find this Fath Singh in Grant Duff, is it another name for Báji Ráo?

country of Umatwárah.* There was a further force of twelve thousand men which had not crossed the Narbada. Another army, supposed to number ten to twelve thousand men, was directing its steps towards Málwá by way of Gadh.† Eighty or ninety thousand of the enemy were thus advancing on all four sides.

As soon as the Mahrattas crossed the Narbada, the zamindárs sent agents to fix the amount of black-mail (*khandali*) to be levied. The money was then paid, and the Rájahs, no longer anxious about their own territories, stayed at home. The zamindár of Shiupuri and Kaláras and others gave hostages for the punctual payment of the annual tribute. The Rájah of Orchha, the Bhadauriya Rájah, the sons of Chattarsál, and the Rájah of Datiya fixed what they had to pay. The zamindárs of Málwá exchanged turbans with the Mahrattas and entered into alliance with them.

Muhammad Khán tried to open negotiations direct with Rájah Sáhu at Púna, but the only answer received was, that Báji Ráo Pandit Pardhán, who was of high dignity and power in his State, was his sole and only adviser in all matters. A written document should be given as demanded; Pílájí Jádón and Mulhár Holkar were subordinates of the Pandit Pardhán, and must act according to his wishes.

On hearing that the enemy were approaching Khimlása, Muhammad Khán left Loḍah-Dongar,‡ and after continuous marching for three days and nights he arrived at Sironj. It was decided that next morning they would attack the enemy, who were reported to be thirty thousand strong. Then intelligence was received that Mulhár had left Umatwárah with fifty thousand horse, and after levying black-mail from the Maharáo (of Kotah) had arrived within fifteen or sixteen miles of Sironj. Twenty thousand men were also scattered about Mandeshwar, Ujain, and Sháhjahánpúr, to the south and west of Sironj.

It was obvious that if Muhammad Khán went on to Khimlása, it would take him ten to fifteen days to defeat and pursue the enemy. While he was absent, a second Mahratta leader would plunder Sironj, Bhilsa and other towns. Muhammad Khán thought it best to succumb. He therefore sent for both the Mahratta leaders, gave them presents, with horses and an elephant, by way of "*khila't*." After an agreement had been made, they went away by Gadh and crossed the Narbada in boats. After the Mah-

* Umadwara, a small district in the province of Málwá, of which it occupies the centre, it is bounded by the Káli Sind and Parbati rivers. The principal towns are Chaunchra, Rájghar and Kujnir. Hamilton's *Hindústán*, I, p. 357. See also Aitchison's *Treaties*, Ed. 1876, Vol. III, p. 446.

† Perhaps Gadh Mandala, 90 miles S. E. of Sagar.

‡ From the remarks of the author of the *Hadikat-ul-Akálám*, in describing the campaign of the English south of Gwáliár in 1782, it seems that this place must be quite close to Kaláras.

ratta custom, they had asked for an agreement in writing, but this, without the Emperor's leave, Muhammad Khán refused to give. He reported to Court that if his orders were to oppose the Mahrattas, the requisite troops and money must be sent, and if a settlement was to be made he would act accordingly.

Muhammad Khán now settled for the rainy season of 1732 at Sironj, and employed his leisure in writing to Delhi for help. He prophesied that the next year the Mahrattas, if not checked, would spread from the banks of the Narbada to Akbarábád, Allahábád, and close to the territory of Bihár, then would finally turn upon Subah Ajmer. The income of Málwá could not provide for the pay of an army. For twenty years he had served the Imperial house, but whatever he had saved was all expended. His *jágirs* were in the hands of the Bundelas, and when he was despatched to Málwá, the ministers made him swear solemnly that, till the Subah was reduced to order, he would make no attempt to recover his *jágirs*. Meanwhile Ján Nisár Khán, faujdár of Kora, had for three years levied large sums from Sahindah, and other parganahs made over in trust to Anandi Sangram. Without 40,000 horse and 40,000 foot, order could not be established, while he (Muhammad Khán) had not money to pay even two thousand horse. He therefore asked for five lakhs of rupees a month, a strong Mughul force, and contingents from the friendly Rájahs. The Mahrattas had four or five armies stationed at five or six marches from each other, and a similar disposition ought to be made of the Imperial forces. If his word be doubted, and his reports be held long-winded and exaggerated, he begs that some one else be deputed, whose reports are trusted and "who can abbreviate this lengthiness," and he (Muhammad Khán) would willingly serve under him. There were of old seven Sultáns in the Dakhin, but former sovereigns overcame them. In comparison, what an easy task it would be to get rid of "this set of thieves" from one corner of that country, if His Majesty would leave Sháhjahanábád and bring an army to Málwá. If things went on much longer as they were, the disturbance would soon extend to Hindústán. How much better it would be, then, to resist the encroachment at once.

"Sar-i-chashma báýad giriftan ba-míl,

"Chú pur shud, na báýad guzashtan ba pí'l."

Instead of sending any help, letters from Court were now sent to various zamindars, hinting that a new názim was about to be appointed. They should therefore await his arrival instead of joining Muhammad Khán. Similar letters of encouragement had been forwarded to the Mahrattas. Nizám-ul-Mulk, although appealed to, made no sign; and then other efforts were made to obtain help from a distance. By a parwanah of the 20th Ramzán, in the 14th year (6th March, 1732), the Nawáb sent

Rs. 17,000, in *hundis* upon the bankers of Lahore, to the commanders (*tumandárs*) of the Afghans living in Kábul. They were requested to enlist recruits, but none appear to have come.

The only answer from Court to Muhammad Khán's appeals was an upbraiding letter from Khán Daurán Khán. The Mahrattas had been allowed to spread all over the country, while Muhammad Khán's agents accompanied them, pointing out the proper routes. It was asserted that the arrival of the enemy at Orchha and Narwar was with the connivance of those agents. By great exertions, Khán Daurán Khán says, he had obtained a renewal of the grant of parganah Akbarpur* from 1146 Fusli, although His Majesty said it had been granted several years before for one harvest only, and the officials of the Diwání made objection that it was *khálisa*, or directly under the Crown. In another letter of this time, Khán Daurán Khán sets forth with great vehemence his own incorruptibility, and asserts that, except the enhanced *jágir* of one *kror* of *dám* granted in the Sayyads' time (1713-1720), he had received nothing. All beyond this he held to be accursed. What then could he gain by dismissals or appointments to offices or *jágirs*? When Muhammad Khán was appointed to Málwá, he had, out of friendship, pressed for the removal of one of his (Khán Daurán's) own relations, who had been previously named.

Soon a *farmán* in the Emperor's own hand-writing reached Sironj, informing Muhammad Khán that Rájah Jai Singh Sawáe had been appointed his successor, and directing him to report himself at Mustakirr-ul-Khiláfat Akbarábád, to which place the Emperor in person intended to proceed after hunting in the preserves of Shiuli near Delhi. Information of his supercession had already reached him on the 4th Jamadi, I. (12th Oct. 1732), in letters from Káim Khán, his son, Mangal Khán, who had gone to Delhi to raise men and money, and Pir 'Ali Khán, his representative at Court. Orders were at once issued to Mukím Khán to report himself to Muhammad Khán after making over the town of Ujain and the other places to the servants of Ráj Adhiráj. On the 6th of the same month (14th Oct. 1732), the Nawáb's family and dependents started on their way home. The men engaged by Mangal Khán were made over, with the Emperor's approval, to the naibs of Ráj Adhiráj (Jai Singh Sawáe). Muhammad Khán then left Málwá and arrived at Akbarábád on the 29th Jamadi, II. (6th Dec. 1732), after an absence of two years.

Apart from difficulties about money, and the general non-success of his arms, three causes appear to have led to Muhammad Khán's disgrace, (1), the complaints of the *jágirdárs*, who were influential in the palace, (2), the attack on Chhattar Singh Narwari, who was protected by the favourite, Háfiz Khidmatgár Khán, and others, (3), the friendship which

* In the Cawnpur district.

appeared to have sprung up between Muhammad Khán and Nizám-ul-Mulk, whose acts were then most jealously watched by the clique in power. The subsequent rapid advance of the Mahrattas is Muhammad Khán's best justification, and it is clear that with inferior means he did as much, if not more, than the Wazir and the Amír-ul-Umrá, backed by all the forces of the empire, were able to accomplish.

Campaigns against the Mahrattas—1145-1149 H. (1732—1736).

In the 15th year (Sept. 1732 to Aug. 1733), shortly after Muhammad Khán's arrival at Akbarábád, he received a *farmán* from the Emperor stating that the Mahrattas were reported to be between Sironj and Narwar, and engaged in plundering the zamindars of the Umaiṭ clan. Jamdat-ul-Mulk, 'Itimád-ud-daula, Ḳamr-uddin Khán having been appointed to repel them, Muhammad Khán was directed to join him. 'Itimád-ud-daula also wrote to the same effect.*

With Ḳamr-ud-din Khán, Wazir-ul-Mamálík, came Zabír-ud-daula Mahámid Jang, his brother, and Khán Fírúz Jang, son of Asaf Jáh Nizám-ul-Mulk and son-in-law of the wazír. When they reached Akbarábád, Muhammad Khán went out to meet them and escort them. The next day the wazír came to the Nawáb's house and urged him to join in the campaign. Looking on it as a holy war for Islám, Muhammad Khán agreed. He then advanced with Khán Fírúz Jang and Mahámid Jang beyond Narwar to Loḡah-Dangar, south of Kaláras. There he heard that the infidels had crossed the Narbada, but Rájah Jai Singh Sawáe, unable to bar their way, had sent his baggage home to his own country, and had himself gone one march in that direction. The wazír, who had received a letter from Rájah Jai Singh Sawáe, wrote urgently to recall Muhammad Khán, on the plea that the rains were upon them and nothing more could be done. The Nawáb in obedience to these orders retraced his steps, and rejoined the wazír at Shiupuri.

They then marched to punish the son of Udárá, who had instigated the murder of Ján Nisár Khán, faujdár of Kora and brother-in-law to the wazír. On the 9th Muharram, 1146 H. (11th June, 1733), they drew near to Gházipur.† The Rájah's fort was bombarded from three hours after sunrise till far into the night. During that day the batteries were advanced to the ditch of the fort which surrounded the houses. Bhagwant in the darkness fled to the jungle, and took refuge in Súthar, a place of strength belonging to him. Muhammad Khán then encamped on the Jamna at the

* His full titles are Wazír-ul-Mamálík, Jamdat-ul-Mulk, 'Itimád-ud-daula, Ḳamr-ud-din Khán, Chín, Naṣrat Jang.

† In the Fathpur district, about 11 miles S. W. of Fathpur, and about 8 miles from the left bank of the Jamna.

ferry of Chár Khájari, while troops went in pursuit of the fugitive. One account* states that Muhammad Khán adjusted the matter by exacting a contribution, but his own letters do not state how the affair ended.

Muhammad Khán does not appear to have taken part in Muzaffar Khán's campaign of the 16th year (1146-1147 = Sept. 1733—Sept. 1734), or in that of the 17th year (1147-1148) under Kamr-ud-dín Khán. About this time Muhammad Khán had a dangerous illness, and for fourteen days he could eat or drink nothing but a little rice-water.

In 1148 H. (May 1735—May 1736), or 1149 H. (May 1736—April 1737), Muhammad Khán reported to His Majesty that the son of Báji Ráo with other leaders was in Bundelkhand. A party of them with two or three hundred horse came to the banks of the Jamna, and ascertained several places where the river was fordable. The rumour was that they intended to cross into the Duáb. In reply the Emperor wrote that the sons of Chattarsál were in league with the enemy, and had given them a passage. It was expected that they would ravage Korá, Kálpi and Itáwah. Sarbuland Khán Mubáriz-ul-Mulk had received orders to prevent their crossing, while Muhammad Khán, instead of remaining idle, should proceed towards Gwáliár. The Emperor intended to go to Akbarábád in person.

Muhammad Khán's reply to this command was, that he had no means to raise an army, that he still owed his men the pay for their second year in Málwá. In his beggared state he had not thought it advisable to go to Gwáliár, he was moreover ill, but he hoped his son, Akbar Khán, would be appointed faujdar of Gwáliár. In another letter to the wazír he declines to attend, as he does not wish to appear at Court solitary and without friends. He sent his son, Káim Khán, with such troops as he had. If the Emperor appointed him to a subah and granted him ten *kror* of *dám*, he could raise as many men as was desired. To meet the enemy fifty thousand men were required, and the revenues of a subah would be absorbed. To go with an insignificant force to Gwáliár, and there to sit with hands drawn into sleeve and feet into skirt, would only encourage the invaders.

Next Khán Daurán Khán Amír-ul-Umrá writes two letters to Muhammad Khán. It was reported that Chimná Jí had advanced beyond Gwáliár *via* Sironj and Bundelkhand, after ejecting Rájah Jai Singh from Málwá, and had plundered the country. Muhammad Khán should collect a large army from the country near Akbarábád, and a subsidy would be allotted. Burhán-ul-Mulk had orders to proceed to Akbarábád and was advancing by daily marches. Fakhr-ud-daula, brother of Khán Daurán Khán,

* That of the "Sa'adat-i-Jáwed" in Dowson's Elliot, VIII, 342. See also Elliot, VIII, 50, and Supp. Glossary, p. 326. From the *Hadikat-ul-Akálím*, Second Clime, art. Itáwah, we learn that the Wazir had hurried to Delhi, to thwart a combination between Khán Daurán, Burhán-ul-Mulk, and Mubáriz-ul-Mulk.

was also on his way with a strong force. Ráo Badan Singh Ját would soon be at Akbarábád. All these would aid in the protection of the city. Nasrat Yár Khán and Ráo Shiu Dás, the náibs of the Názim (Rajah Jai Singh Sawáe), would also assist. The great object was to defend the subah, to tranquillize the city, and to preserve the name and fame of Hindústán. Mubáriz-ul-Mulk would soon arrive at Gwáliár, and the Bhadauriya Rájah, if freed from anxiety about his home, would also join.

Rájah Jai Singh Sawáe also opened communications with Muhammad Khán, and tried to induce him to quit his retirement. At first Muhammad Khán's only reply was to taunt Jai Singh, pointing out that he held one-third of Málwá, one-fourth of the Delhi subah and the whole of the Akbarábád Nizámat, besides his native country, which produced an income equal to that of a Subah. The Mahrattas in the Jaipur territory pretend to be one in aim and object with the Rájputs and Bundelas. This is only deceit (*filosofí*), who knows where they will stop, not only have they reached Hindústán but they are spread abroad in Bangálá. The Rájah might be quite sure that, whenever they had made safe their position elsewhere, they would throw him over, and demand the very places which they then professed to protect.

By the offer of *jágirs* and money payments, Rájah Jai Singh succeeded in overcoming Muhammad Khán's reluctance to serve again. Before he appeared in the field, however, the Mahrattas, having crossed the Jamna at the ferries opposite Aurúyah and Saráe Ajít Mall in the Etáwah district, had plundered Khánpur, Derapúr, Mangalpur, Sikandrah and Shiuganpur.* Their collectors had recovered *khandi* from the zamindárs and faujdárs of the Duáb. Other parties were scattered in the country of Gwáliár, Bijipúr† had been surrounded, and the inhabitants of Antri‡ had taken refuge in Gwáliár. The latter were suspected of being in league with the invaders. The zamindárs of Raojhá (¶) had been defeated.

On the 7th Ramzan, 1148 H (10th Jan. 1736), the Nawáb's troops began to cross the Jamna. Muhammad Khán had fixed the 14th Shawwal for his own advance, but as the Mahrattas were reported to have gone off towards Delhi, the inhabitants of Akbarábád and Ráo Shiu Dás, náib, became frightened. The army of the invaders in Bhadáwar might see their opportunity, and crossing the river might invest the city.

Reports now came in that one force of Mahrattas had advanced beyond Núrábád§ in the direction of Akbarábád, and that another party was near

* The first is, I suppose, our Cawnpore, the other places are in the Cawnpur district. There is, however, a kasbah Khánpur just south of Aurúyah.

† Lat. 26°, 2'. Long. 77°, 28', fifty-two miles S. W. of Gwáliár.

‡ Twelve miles S. of Gwáliár.

§ Fourteen miles N. W. of Gwáliár.

Antri in the country of Bhadáwar. Accordingly on the 21st Ramzan, 1148 H. (24th Jan. 1736), a division of two thousand horse and two thousand foot, under Zabardast Khán, Rasul Khán and others, was sent to Dholpur to protect the ferries on the Chambal. The zamindárs of the Dandota, Satgír, Ardwar, Túpuri and Gujar clans were granted *khila'ts*, and posted from point to point (*nákabandi*) to guard the routes. This task was efficiently performed, although the náib faujdár of Dholpúr had retreated. A party of the enemy posted themselves at Núrábád and came daily to the ferries, but found they were unable to cross. Muhammad Khán exercised similar vigilance in Akbarábád; at length the Mahrattas went back to Bhadáwar, and there rejoined their other army. Gwáliár was held by 'Umr Khán, with two thousand men from Mau under Kále Khán Khaṭak, Sher Khán Warakzai and Ahmad Khán Afridi, added to one thousand men of Gwáliár itself.

The usual complaints now commenced of want of means, and of difficulties about the pay of the troops. Yáḡut Khán, Khán Bahadur, was sent home to bring five lakhs of rupees, but after great difficulty he provided 1,20,000 rupees. This was like a drop of water on a fire. Muhammad Khán, though ready and willing, professed to have no money, and for a year had been waiting in Akbarábád, put off from day to day with promises.

Muhammad Khán's efforts were further paralysed by doubts of the policy favoured at Court. He exclaims that he could not find the word to the enigma; while he waited for orders to march on Dholpur, the infidels resorted to Delhi, where they received audience of His Majesty. They were received as friends, and money was bestowed on them. Should he march to Dholpur and fight the enemy, he might be told by the ministers that peace had been concluded, and that he had only thrown matters into confusion.

He reports that Báji Ráo had one hundred thousand horsemen in Bundelkhand, Bhadáwar and Gwáliár. Part of them had gone towards Kálpi intending to plunder Korá. The sons of Chattarsál and Bhagwant (of Gházipur in the Fathpur district) had agreed to pay them lakhs, and to levy khrs of rupees for them in that country; other Hindu Rájahs and zamindárs beyond the Jamna and Chambal had pricked up their ears, and even some parties of Muhammadans from Málwá had entered their service. The Bhadauriya Rájah like the rest had come to terms with the invaders. In no way had Báji Ráo quitted the service of Rájah Sáhú, nor had the Mahrattas ceased to harry the Imperial territory. At such a critical moment, the Nawáb could not understand why Burhán-ul-Mulk was sent to his Subah, and Rájah Abhai Singh of Márwár to his home.

At length Rájah Jai Singh Sawáe wrote to say that, on the 8th Rabi I, 1149 H. (5th July, 1736), Báji Ráo and his son had submitted to the Imperial authority. With Ránújí Sendhia, Mulhár Holkar, Baswant Ráo Punwár, and other companions, he sought an interview with the Rájah at

Dholpur. He gave an agreement under his seal, with sureties, not to act contrary to his word. Báji Ráo left on the 18th of the same month, while Rájah Jai Singh proceeded towards Subah Ajmer, where the Ráthors had raised disturbances. Apparently this was the occasion on which Báji Ráo received the appointment of náib Názim of Málwá.*

Shortly afterwards, in the same year, the Mahrattas crossed over into the Duáb and plundered Firúzábád, 'Itimádpur and Jalesar. Burhán-ul-Mulk, without waiting for the rest of the Imperial forces, attacked and defeated them near Jalesar. Khán Daurán Khán then advanced from Delhi with a large force, accompanied by Muhammad Khán at the head of twelve thousand men. They met Burhán-ul-Mulk near Mathura early in Zi'l Hajj 1149 H. (March—April, 1787). As they were returning to Delhi the Játs of the village of Mitrol, between Kodál and Palwal, fell on and plundered their baggage. By the Emperor's order Muhammad Khán returned to protect Akbarábád.†

Muhammad Khán asks for Bengal and Patna, but gets Allahábád.

Káim Khán was now at Court, and through his influence, the Emperor promised to appoint Muhammad Khán to Patna and Bangálá. To conceal the matter from Mahábat Jang, the then Subahdár of Bengal, no *sanad* was to issue for that Subah, a note in the Emperor's hand-writing being taken instead. Muhammad Sháh was never long of one mind, and he soon began to raise difficulties. Muhammad Khán then proposed that Káim Khán should be made Názim of 'Azímábád-Patna, while he should be made náib of Bengal under the heir-apparent. He offered to remit to Court all the property confiscated by 'Ali Wardi Khán, and to pay regularly ten or fifteen times the revenue forwarded by Sarfaráz Khán,‡ signing any undertaking that might be demanded. Notwithstanding these promises, the negotiation seems to have fallen through.

Allahábád was then asked for, but a formidable rival arose in Burhán-ul-Mulk, who offered a *peskhaskh* of fifteen lakhs of rupees. Muhammad Khán's claims appear, however, to have had some weight. His conditions were, that he should obtain the Subah, free of all interference, including Jaunpur, Gházipur, Kuhna Saráo, Banáras, Hádah, Mánikpur, Ghorá, Kálinjar etc.; that Korá and Kanauj should be made over to him as dependencies; and that Sarkár Gwáliár should be given to Khizr Khán as Súbah, with Muhammad Khán as Názim. Without entering Korá, he could not bar the way to the sons of Chattarsál and Bhagwant, and if he had no

* Grant Duff, 234, 235.

† Dowson's Elliot, VIII. 54, 55, 56.

‡ Son of the former Subahdár, Nawáb Shuja'-ud-daula. He had been ousted by 'Ali Wardi Khán Mahábat Jang.

jurisdiction there, his interference would occasion never-ending disputes. Kanauj, which was in the hands of a stranger, the Bhadauriya Rájah, was his home country, and till he held it he could never feel himself safe while absent in Allahábád. At length the *farmán* of appointment was forwarded by Kamr-uddin Khán Chín 'Itimád-ud-daula, the Wazír, and Muhammad Khán was ordered to attend Court at once with five hundred horse.

It was in the beginning of Rajab 1148 H. (Nov.—Dec. 1735), that Muhammad Khán was restored to the Súbah of Allahábád. A few months afterwards, on the 4th Muharram, 1149 H. (4th May, 1736),* Sarbuland Khán was restored. Muhammad Khán seems to have obtained afterwards promises of re-instatement, but his claims were postponed to those of Amír Khán 'Umdat-ul-Mulk, who was appointed to Allahábád in the year 1739.† On Amír Khán's assassination in 1159 H. (Jan. 1746 to Jan. 1747),‡ the Súbah passed to 'Abd-ul Mansúr Khán Safdar Jang.§

On relinquishing his government into the hands of Sarbuland Khán, Nawáb Muhammad Khán strongly recommended to his protection Rájah Jaswant Singh, zamindár of Bhadoi|| who when at Court had been made a *Sikhazári*, 2000 horse, with the title of Rájah and the gift of kettle-drums. He was appointed to the charge of the *rahdári* from Banáras to Allahábád, and he performed well the duty of keeping the roads open. Rájah Jai Singh of Maudah had, however, interfered, and had collected much money from Bhadoi. Rájah Jaswant Singh would he hoped be preserved from further oppression.

Muhammad Khán's interest in Rájah Jaswant Singh arose from the fact that the Rájah had given to the Nawáb a daughter in marriage. Jaswant Singh had also taken the field on one occasion in Muhammad Khán's cause. In 1148 H. when Muhammad Khán was re-appointed to Allahábád, Sarbuland Khán wrote secretly from Sháhjahánábád to his son and deputy, Sháh Nawáz Khán, directing him to oppose the entry of the new Subah-dár. On the other hand, Jaswant Singh, at the instigation of Muhammad Khán, marched from Bhadoi towards Arail, having with him 2000 horse and 20,000 matchlockmen. He was joined by Lál Bikramájít, son of Jográj Gahilwár, Rájah of Bijipur and Kantit.¶ The allies then prepared to attack Sayyad Muhammad Khán, ruler of Arail. On hearing of this rising, Sháh Nawáz Khán left the fort of Lál Jálwah in parganah Sangror with 1000 horsemen, Shekh Allahyár, author of the *Hadikat-ul-Akálím*, having

* Both dates are taken from the "Tabsírat-un-Názirín."

† Dow, II, 438, ed. 1803.

‡ Miftáh-ut-tawárikh, p. 489.

§ 'Amád-us-Sa'dat, p. 50.

|| In the Mirzápur district, on the left bank of the Ganges.

¶ Both in the Mirzápur district.

command of the van. Marching all night, they crossed the Ganges at the ferry of Kasondhan.* Before their arrival, Jaswant Singh attacked Sayyad Muhammad Khán, most of whose men fled; and although he held his ground under a mango tree with a small body, some forty-three in number, of his best troops, his artillery and standard elephant were taken. Shekh Allahyár now arrived, and Sháh Nawáz Khán engaged the enemy on the left. Their horsemen, thinking the day was won, had dismounted, and were seated in the bed of a dry tank. When the Muhammadans approached, the syces ran away, Lál Bikramájít and Jaswant Singh alone succeeded in mounting their horses. The other men tried to escape on foot pursued by Shekh Allahyár's troops. Many of the horses, owing to the uneven ground of the tank, fell and threw their riders. Shekh Dín Muhammad Bilgrámi, hampered by his armour and his iron gauntlets, and the unsteadiness of his horse, was set upon by a group of ten Rajputs, who pulled him off his horse. He succeeded in cutting off the heads of two men, and broke his sword on the third. Of the seven left one tried to wrestle with Dín Muhammad, when Sayyad Muhammad, a retainer of Shekh Allahyár's, rode up and was about to dismount. Dín Muhammad told him not to interfere. Two of the assailants now fled, another tripped and fell, and Dín Muhammad despatched him with his mace. Sayyad Muhammad then wounded the last Rajput, who threw down his sword and begged for his life. This encounter was witnessed by Shekh Allahyár, then fifteen or sixteen years of age, from the back of his elephant. Pursuit was made for three *kos*, till they drew near to the hills of Bijipur. In the morning 1720 dead bodies were counted; on the side of Sháh Nawáz Khán 83 men were wounded and 7 killed.†

Nádir Sháh's Invasion.

When Nádir Sháh invaded India and defeated the Imperial troops near Karnál in February 1739, (1151 H.) Muhammad Sháh, the day before the battle, put Nawáb Muhammad Khán in charge of his women. Muhammad Sháh, the story goes, made some bitter remark as to his absence from the battle-field, which provoked a quick retort from Muhammad Khán. The Nawáb retired in dudgeon to his house at Bangash ghát on the Jamna. Many days after, Nádir Sháh asked for his friend Muhammad Khán. The Emperor sent for him, but the Nawáb replied that he was ill. The messenger went back and fore several times. At length two of Nádir Sháh's chamberlains (*nashchi*) and Muhammad Sháh's page (*kharwás*) were sent. No longer able to excuse himself, Nawáb Muhammad Khán told his companions that his last hour

* On the left bank of the Ganges, in parganah Kewail.

† *Hadikat-ul-Akálím* Iklim II, art. Arail, and Iklim III, art. Bilgrám, Account of Shekh Dín Muhammad.

had come. Putting on his chain mail-shirt (*zarrah*), his breastplate and back-piece (*bagtar* and *chahár-aina*), his helmet (*khuz*) and gauntlets (*dastyána*), and attaching to his waist his shield, sword and dagger, he started for the audience hall, taking with him his son, Ahmad Khán. Muhammad Khán, being a mere soldier, did not understand a single word of Persian, Turki or Pushtu, while Ahmad Khán understood all three.* When they arrived, Nádir Sháh and Muhammad Sháh were seated on two chairs in a line. Two hundred Wiláyatis were on the right and two hundred on the left of Nádir Sháh with drawn swords in their hands. The master of the ceremonies ('Arzbegi) announced Muhammad Khán, stating that he was armed and refused to leave his sword at the door, on the ground that he was a soldier, not a noble, and that a soldier's jewels were his arms. Nádir Sháh directed that he should be admitted armed. When Muhammad Khán appeared, he first made obeisance to his own king, and then turning to Nádir Sháh presented his dagger by way of offering (*nazar*). Nádir Sháh touched and remitted it. Muhammad Khán then went and stood at the right side of Muhammad Sháh. Nádir Sháh remarked, "Brother Mirza Muhammad Beg, you have three faithful servants, and the rest are traitors; those three are Násir Khán, Khán Daurán Khán and Muhammad Khán; from these I received no letters, from all the rest I received invitations to invade your country." Muhammad Khán craving leave, remarked that none was so faithless as he; for had he been staunch His Majesty would not have easily come so far; and he regretted that he had not been posted to the van of the army. Nádir Sháh made no reply. After a short interval a *khila't*, more valuable than given to any of his equals, was granted. Putting on the robes, he made his obeisance, but gave no money offering. Nádir Sháh's wazír, thinking this was wrong, asked the reason. Muhammad Khán answered that it was not a soldier's business to give tribute of gold and silver, that he left to amírs and wazírs. He was only a soldier, and his head was his offering.

Some days after this, Muhammad Khán attended an audience, when the two kings were seated as before, guarded by the Wiláyatis with drawn swords. Nádir Sháh's Persian troops and a small number of Muhammad Sháh's men were drawn up outside. With Muhammad was a Shekhzáda of Shekhpur,† very clever but very thin and very short. He was a perfect master of the art of archery, and possessed arrows of every sort.‡

* Pír Muhammad Khawás is named as the authority for this story.

† A village close to Kamálganj, on the Cawnpur road, 8 miles south of Farrukhábád.

‡ The following are the names of various kinds of arrows then in use: 1. *Lais*, it tears the flesh: a single arrow costs as much as a gold coin. 2. *Kalandra*. 3. *Kohar-tarásh*. 4. *Gherá*, with a head three fingers broad; it makes a wound like a

Nádir Sháh called out a champion, a great big man, and asked Muhammad Sháh to match him. Muhammad Khán proposed to meet him, but the Shekhzáda offered to go instead. The Nawáb laughed at him, and said he did not want to be turned into the laughing stock of the army. The Shekhzáda would not listen. Meanwhile, the perspiration poured down Muhammad Khán's body from anxiety, and he muttered a prayer to God. Seeing his opponent, the Persian said he would lift him and carry him off on his lance point. The combatants then galloped their horses at each other, and the Persian several times failed to touch the Shekh. At last his lance hitting him penetrated through his armour, and he was lifted from his horse, sticking to the end of the lance like a *naḡ* (tumbler), and he bled a little. Nádir Sháh began to laugh, and the countenances fell of those on the other side. Then wounded as he was, the Shekh let fly an arrow at the horseman's head so that it went through his steel head-piece and his chain-shirt, then entering his horse's body it came out and fell into the ground uninjured. The man stunned sat on his horse for a minute with the lance in his hand. The Shekh, with the lance still sticking into him, called out "Come and remove this, for the man is dead." Nádir Sháh praised the Shekh highly and gave him a *khila't*. On the 7th Safar, 1152 H. (5th May, 1739), Nádir Sháh left Delhi, taking with him all his plunder.

Muhammad Khán's correspondence contains little or no reference to the invasion of Nádir Sháh, possibly because he was present in person at head-quarters, and thus had less occasion to write letters. Only once, in writing to Báji Ráo, he declares that when Nádir Sháh attacked Kandahár, the Afghans of Kábul wrote that if Muhammad Khán were appointed they would resist, they only wanted a leader. When he spoke to the Emperor, the plan was at first approved but subsequently rejected.

When Báji Ráo, after the departure of Nádir Sháh, wished the nobles to unite in one confederation to reduce the affairs of the Taimurya line to better order, Muhammad Khán was one of the nobles to whom he wrote. The Nawáb returned a favourable reply, though, as he professed, he had little further interest in the world—" *duñyá nakshe ast bar-áb o ziyáda as siráb nest*"—a remark which reminds one of Bacon's—

"Who then to frail mortality shall trust

But limns on water, or but writes in dust."

These plans were put an end to by Báji Ráo's death in the year 1740.

spear. 5. *Nukta*, without head, it inflicts a blow but no wound. 6. *Thúth*. 7. *An-kri-dár*, with a bent head like a saddle-maker's needle. 8. *Náwak*, this is a kind of pipe of steel like a flute (*pángi*) attached to the bow. In this district Sirolí Chand Thok, in parganah Shamsabád East, is celebrated for its bows and arrows.

Death of Akbar Khán.

It was about this time, 1152 H. (1739), that Nizám-ul-Mulk and his son, Gházi-ud-din, now at the head of affairs, disgusted Muhammad Khán by non-fulfilment of a promise to confirm him in his government of Alláhábád, which was given to Amír Khán 'Umdat-ul-Mulk.* Muhammad Khán quitted Court without leave and retired to his estates. Sher Zamán Khán and Abu Samad Khán were sent at the head of a large force, with orders to turn him out of his territory. Nawáb Muhammad Khán, not being in good health himself, sent his elder sons, Akbar Khán and Ahmad Khán, to oppose the invaders. Akbar Khán had ten thousand horse, and Ahmad Khán five hundred horse and one hundred swivel guns carried on camels. The foot soldiers were also very numerous.

The two armies met at Rao-ká-Sikandra in the Aligarh district. Now, Muhammad Khán had instructed his chief-men that on no account were they to allow Akbar Khán to fight on horseback, for being a young man of rash temper, he might ride into the enemy's ranks and be destroyed. The Patháns therefore forced Akbar Khán to mount an elephant. Ahmad Khán's elephant was coming up alongside, when Akbar Khán called out "Keep that elephant back, why are you driving it up beside mine." Akbar Khán was of a very proud nature, and being the next in age, he did not defer even to the eldest son, Káim Khán, thinking that on Muhammad Khán's death he, Akbar Khán, would succeed. Ahmad Khán was vexed by his brother's words, and drove his elephant off to some distance.

The battle then began, both of the nobles sent from Delhi were slain, and the Patháns gained the day. Then Ahmad Khán out of revenge turned his camel swivels in the direction of Akbar Khán, and ordered them to be discharged. The ball from one of the *zambúrak* penetrated Akbar Khán's brain, and he was killed on the spot. They brought the body home, and Nawáb Muhammad Khán mourned much for him, lying for three days on his cushion weeping for him and fasting.

Muhammad Khan negotiates for Ali Muhammad Khán Rohela.

In 1158 H. (18th March, 1740—7th March, 1741), Rájah Harnand was sent as Názim to Katahr, with orders to expel 'Ali Muhammad Khán Rohela. In this difficulty the Rohela appealed to the Nawáb to intercede for him, for although Harnand had given his acquittance for the *kharij*, he still showed hostile intentions. The Nawáb wrote to Kamr-ud-din Khán, Wazír, hoping that he would not send his son Mír Mu'in-ud-din Khán, to reinforce Rájah Harnand. 'Ali Muhammad Khán was a loyal subject, who had attended Court every year, and in 1729 when 'Azim-ullah Khán Zahir-ud-daula, the wazir's brother, went against the Sayyads of Bárha, the Rohela joined with his troops and did good service. A man who

* Dow, II, 433.

performs such services should not be ruined for some little fault, especially at a time when the rebels (the Mahrattas) were very strong. Even if a fault had been committed, let it be forgiven. Káim Khán was also instructed to urge the same objections to the wazír personally. But on the 4th Muharram, 1154 H. (11th March, 1741) letters were received from Káim Khán, stating that the wazír insisted on presenting his son, Mir Mu'in-ud-din to the Emperor, so that he might be appointed to support Rájah Harnand.

Before this, Muhammad Khán had sent Rahmat Khán and Sháh Ikhtiyár to negotiate with Rájah Harnand. Sháh Ikhtiyár came back with a message asking for two trusty men. Muqím Khán and 'Abdullah Khán were sent with him, and they took with them the wazír's letter in original. They reached Budáon. Meanwhile Rahmat Khán had joined the Rájah, and remained in his camp six days. Then he was dismissed, and the Rájah made three or four marches of twenty *kos*, and drew near to the army of 'Ali Muhammad Khán, who had encamped at seven or eight *kos* from Anwala.*

In this interval Muhammad Khán had advised 'Ali Muhammad Khán not to hold money too dear, but to settle matters. The Nawáb had never seen his troops, no doubt they were efficient. But, by aid from friends, matters might be brought to a happy conclusion. He should, however, strengthen his posts and collect men and material. His men should be called in from all outlying posts to one point. No opponent could carry away the soil, and after he had retired the *thánas* could be restored as before. If the troops were scattered, they could not support each other, and if one party suffered a reverse, all the rest were disheartened. All this had been experienced and proved by Muhammad Khán. But as far as possible, soft words should be used, and money spent to get rid of the difficulty. If in no way it could be settled, even at the cost of a year's income, then an efficient resistance should be made.

The affair ended by the defeat and death of Rájah Harnand.† Muhammad Khán did his best to persuade the wazír that 'Ali Muhammad Khán had not meant to fight, and that the calamity was not his fault. He was still ready to submit.

Nawáb Muhammad Khán's correspondence with 'Ali Muhammad Khán ends with the acknowledgment of a letter, which mentioned the arrival of the Rohelas at Almorah in Kumaon on the 5th Ramzan, 1154, (3rd Nov. 1741). The hillmen had fled to the other side of the Sarjú, while the zamindár of Srinagar and Sirmúr Bahat had sent his brother to treat. Snow having fallen, the Rohelas had removed to Rudrapur and would soon be back at Anwala. Muhammad Khán refers to the advice he had given that, the climate being severe and the produce small, an arrangement should be made. The cour-

* In the Bareli district.

† Life of Hafiz Rahmat Khán, pp. 16, 17.

tiers, he says, looked on a settlement as a victory, and he advised 'Ali Muhammad Khán to report to Court that, to please them, he had left the hills and had returned to Anwala.

Naráyan Dás plunders Najib Ali Khán's camp.

Naráyan Dás, an officer of Rájah Jai Singh Sawáe, had been sent to restore order in Bhadáwar. While there, his troops got out of hand from want of pay, and plundered the equipage of Najib 'Ali Khán, an officer in the employ of Kamr-uddin Khán, the wazír, who was collecting in Karhal.* Nawáb Muhammad Khán, who at the time was faujdár of Shikohábád,† sent Amr Singh and Sháistah Khán to persuade Naráyan Dás to give up the property. Purdil Khán was despatched with men to aid Najib 'Ali Khán, and Ja'far Khán Bakhshi, who was out in the parganahs, was directed to follow. In addition Mangal Khán was sent. When the latter reached Saráe Ajít Mall, and Ja'far Khán was near Itáwah, Naráyan Dás made off by the fords on the Jamna. They followed and persuaded him to deliver up one elephant, elephant kettle-drums, several swivel guns (*rakkha*) and cannon, with carts and bullocks. After considerable difficulty, an acquittance was obtained from Najib 'Ali Khán and forwarded to the wazír.

Story of a Mango.

I introduce here, as an illustration of manners, a story about a wonderful mango tree in Farrukhábád. One day Muhammad Khán was seated in the back seat of Muhammad Sháh's *hauda* during a hunting-expedition. The Emperor ate a mango half a seer in weight, of very fine taste, good colour and exquisite aroma. He gave the stone to Muhammad Khán, who wrapped it in his handkerchief, and sent it to Káim Khán then at Farrukhábád. Káim Khán came out to meet it with honour as far as Soron‡, through which, before the founding of Kásganj,§ ran the road to Delhi. The mango stone was planted in the Haiyát Bágh, where is Muhammad Khán's tomb. The fruit it yielded when it grew up had no equal in Farrukhábád, though only half as good as the original.

Whenever it began to flower, a company of infantry (*najib*) was stationed round it, and they kept guard over it.§ During the fruit season thirty seers of milk a day were poured over the roots. It stood at the

* Both in the Manipuri district.

† On the Burhanga, 27 miles N. of Eta and about 60 miles N. W. of Farrukhábád.

‡ Nineteen miles N. of Eta and about 8 miles S. W. of Soron.

§ Similar honours were paid in the time of the late Nawáb of Rámpur to the tree "Samar-bihisht" in a village just east of Thána Bhowan in the Muzaffarnagar district. This tree has an entry in the *khewaf* or Proprietary Record all to itself. I think the Nawáb paid Rs. 300 for the tree.

head of Násir Khán's tomb, who had once been Subahdár of Kábul. Nawáb Muzaffar Jang (1771—1796) tried to propagate the tree by budding, but with the greatest difficulty the gardeners obtained one tree, which was put in the 'Ali Bágh, where it was known as the "golah" mango. Nawáb Shaukat Jang (1813—1823) once sent several of the mangoes from the tree in the Haiyát Bágh to Hakím Mahndi 'Ali Khán, chakladar of Muhamdi in Audh, who lived for many years in the Fatehgarh cantonment. Mahndi 'Ali Khán said he had eaten few mangoes equal to them, and he asked for some cuttings. Shaukat Jang gave permission, but from the day the cuttings were taken, the original tree began to decay and in one year it dried up and died.

Muhammad Khán's death and his character.

The close of Nawáb Muhammad Khán's career was now at hand. He was more than eighty (lunar) years old when an abscess formed in his neck. The Emperor sent a letter of condolence and one of his private physicians, Alwi Khán. The Hakím's treatment was of no avail, and on the 2nd Zil Ka'd 1156 H. (9th December 1743), Muhammad Khán breathed his last. When Muhammad Sháh heard of his death, he wrote this chronogram—

*Sitún-i-báb-i-mulk-i-Hind uftád.**

About three hours before his death, the Nawáb, to prove the strength with which God had endowed him, took up his bow and arrow from his bed, and aimed at the roof with such force that the arrow buried itself up to its head in the wood.

He was interred in the Haiyát Bágh, in the village of Nekpur Khúrd, pargana Pahára, half a mile or so west from the Mau gate of the city.† The tomb stands on an elevated platform and is surmounted with a high dome, which can be seen for some miles round. It was built by the Nawáb in his own lifetime. Round it he planted a garden in which was every fruit to be found at Delhi. There were forty wells for irrigation, and the income of twelve villages was spent on it. Roshan Khán, chela, had the care of it. While digging the foundations for the tomb, an iron "gaja"‡ weighing five maunds was found. The workmen proposed to fix it on the top of the dome, but Roshan Khán said he could get five maunds of iron easily enough, and he had another spike made. The iron rod thus disinterred was put down at the gate of the garden, and young men went daily to try their strength by lifting it. In Násir Jang's time (1796—1813) it somehow got

* Another "Tarikh" is "Dakhl-ul-jinnat wálá."

† Káli Ráo, p. 53.

‡ See Káli Ráo, p. 127, for a description of what is evidently the same *Gaja* as that referred to in the text.

broken. The two pieces, in 1839, still lay near the Mau gate, and the Hindus worshipped them, saying, that it was the head of Bhim Sen's spear.*

Nawáb Muhammad Khán to the last maintained very plain and soldier-like habits. His manner was not overbearing, he had no pride, and was free from self-glorification. He always wore clothes of the commonest stuff. In his audience hall and in his house the only carpet consisted of rows of common mats, and on these the Patháns and chelas and all persons, high or low, had to be content to sit. The Nawáb sometimes sat on a cushion, sometimes without one. As the Patháns presented themselves, they uttered an "*Auji Nawáb, salám 'alaik*" then sat down in rows. At meal times five to six hundred Patháns would sit down to the same trays. To each were given two unleavened cakes of half a seer each with a cupful of meat, and a flat dish of *paláo*, or whatever else there was, all receiving an equal share. The same food was placed before the Nawáb. Patháns generally eat *paláo* of cow and buffalo flesh, and this the Nawáb liked. He disliked soft bread. They say his kitchen expenses amounted to five hundred rupees a day.

When any noble from Delhi visited the Nawáb, no change was made, the same mats were spread to sit on, and the same food presented. The visitors were astonished at the contrast between his great wealth and power, and the simplicity of his personal habits. Then, for each day after their arrival, the Nawáb would name some chela to entertain the visitor sumptuously.

Once Nawáb 'Umdat-ul-Mulk Amír Khán, on his way from the East, passed through Farrukhábád with his followers, who were so effeminate in their habits that they applied lamp-black to their eyelids, black powder to their teeth, and red dye to their hands and feet; wearing also finger-rings, silver bracelets and ear-rings. The Nawáb himself adopted the same style. Their camp was pitched in the Lakhola Bágh, planted by Nawáb Káim Khán before his accession.† Káim Khán went to see Amír Khán, with whom he was on familiar terms, having known him at Delhi. Amír Khán proposing a visit to Nawáb Muhammad Khán, Káim Khán said he would inform "Bááb Khán" (his father) that day, and would take him the next day. Accordingly he went from Amethi‡ and told his father. Next morning the *diwán-khána* was adorned with a white cloth, and a common pillow was put ready. Then Muhammad Khán sat down with a high cap on, such as then usually worn at Maũ. Before him were a *pán-dán* of painted wood

* Káli Ráo, p. 127.

† It lies outside the Kádíri gate, east of the city, between it and Fatehgarh cantonment.

‡ Half a mile from the Ganga gate, at the N. E. corner of the city.

and a bell-metal spittoon. Amír Khán arrived and was placed at the Nawáb's side. After a little, the Nawáb taking out a prepared betel-leaf from his wooden box and a bottle of scent from a wooden casket, presented *pán* and scent to the visitor and dismissed him. Nawáb Amír Khán was much amused at this poor display. On the road back he said to Káim Khán, "Though your father is a Báwan Hazári, he looks like a villager, why do you not teach him better?" Káim Khán gave some playful answer.

Meanwhile Muhammad Khán had given orders to his chela, Ja'far Khán, the chief Bakhshi, (who gives his name to the Mohulla Bazarya Ja'far Khán), to provide such an entertainment that his master's name should not be a byeword in Delhi. Ja'far Khán got out some thousands of silver vessels, he cut up many thousand rupees' worth of gold brocade, and spread scarlet broad-cloth all over his bāgh. He sent for all the favourite singers, and made ready the most exquisite meats. Nawáb Muhammad Khán sent to tell Nawáb Amír Khán that a feast was ready at Ja'far Khán's house. After dinner, Amír Khán's men proposed making over the silver dishes for safety to the servants of the house, but Ja'far Khán refused them, saying they were the perquisite of the khidmatgárs. The gold brocade was taken away by the singing-women and their men. Amír Khán was now loud in his praise of Muhammad Khán. At his next visit, the Nawáb made him a handsome present, and excused himself for having entertained him so badly, on the ground that he was only a soldier.

Nawáb Muhammad Khán was a great lover of the fair sex. We know that he had twenty-two sons and twenty-two daughters who grew up and were married. For the number of his concubines he was like a second Solomon. He had, they say, seventeen hundred women in the private apartments of his palaces. There were besides nine establishments (*akhá-ra*) of one hundred women each, taken from all classes, Káchi, Chamár, Koli, Rájput, Banya, Báhman, Sayyad, Mughal, Paṭhán and Shekh. Many had seen their lord's face but once, yet all their life long they received the monthly allowance first fixed. Of the seventeen hundred, some nine hundred had died in the Nawáb's lifetime; their tombs were in the Buland Bāgh*, where no men were ever buried. Some days after the death of Káim Khán became known, the Bibi Sahiba, Muhammad Khán's widow, like a sensible woman, threw open the doors of the Bará Mahal, sending word to the inmates that they had three days given them, in which they might leave if they liked. Those that stayed would get bread of barley and clothes of *gazi* (the commonest quality of cotton cloth), for neither Muhammad Khán nor Káim Khán was there to provide for them. About four hundred women elected to leave with all their property, and four hundred only remained to eat the Bibi Sahiba's barley bread.

* Just outside the Mau gate.

The Chelas.

Slavery is a part of the Muhammadan legal system, but there must be, I think, few instances, in which it has been carried to the length practised by Muhammad Khán. Slaves were preferred to equals or relations as deputy governors of provinces, slaves led his armies, he even kept a body-guard of slaves.

One of the reasons assigned for this preference is the trouble given by his brother Patháns of Mau. Many of them at one time had farming leases of parganahs. If the Nawáb complained of embezzled revenue, their answer was, that they would fight, but not pay. If one of them was imprisoned as a defaulter, all the other Patháns rose in arms till he was released. For this reason, it is said, some years after his rise to power, the Nawáb remitted large sums to Afghanistan, and induced a colony of the Bangash tribe to emigrate and settle in the city of Farrukhábád. From among them he selected eighteen leaders as Jam'adars. They were petted in every way, the Nawáb looking on them as his own right arm, and to them his daughters were given in marriage. He gave them land for their houses on the side of the city nearest to the Ganges, and the quarter to this day bears the name of Bangashpura.

Another expedient resorted to was to seize the sons of Rájputs and Bráhmans, who were then made into Muhammadans. Some were obtained by consent, some by payment; others were the sons of revenue defaulters, whose sons were seized and made Muhammadans. Thousands of boys were thus obtained and taught the precepts of Islám. From them were selected the leaders of the army, and the collectors of land revenue in the parganahs.

Muhammad Khán had quite a passion for increasing the number of his chelas. All his managers (Amils) and deputies (Súbahdars) had orders to send him all the Hindu boys, whom they could procure between the ages of seven and thirteen. When they grew up, they were placed in his police or army, or were appointed to manage the Nawáb's private affairs. Whenever an 'amil had a fight with a troublesome village or invested it, he seized all the boys he could get, and forwarded them to the Nawáb. Others became Muhammadans of their own accord. In this way, every year one or two hundred boys were made Muhammadans, and by the end of his life the Nawáb had made some four thousand chelas. Many of these were killed in battle in the Nawáb's lifetime, many died without issue, and many were never married. The descendants of the rest still exist, and are distinguished as *Ghazanfar-bachha* (progeny of Ghazanfar), the title of Muhammad Khán having been Ghazanfar Jang. During the Nawáb's lifetime these men were never styled *chelas*, they were always known as *Tifl-i-Sirkár* (sons of the State). All places of trust were given to them, the Nawáb's

household was in their charge, and his whole establishment under their orders. For many of them he obtained the title of Nawáb from the Emperor.

Of whatever caste a chela had been, he was married to the daughter of a chela originally of the same caste, a Rájput was given to a Rájput, a Bráhma-man to a Brahman, and so forth. This plan was followed till the time of Nawáb Ahmad Khán Ghálib Jang (1752—1771). After that time they all got mixed together, so that one caste cannot be distinguished from another. Among the chelas were the sons of powerful Rájahs, who by misfortune had been captured and made Muhammadans. Thus Shamsheer Khán “Masjid-wala” is reported to have been a Banáfir Rájput, Sher Dil Khán was a Tomar, Pur Dil Khán a Gaur, Dáúd Khán a Bráhma-man and so forth.

The Nawáb used to tell his chelas to collect as much money, goods or jewels as possible. In adversity such property could be made of use to him or themselves. But he who built a masonry structure in any village would be at once removed from employment. Nothing was to be built but with sun-dried bricks and mud mortar, and to each chela permission was given to build a single brick room as reception hall. The only exception was in favour of Yáqut Khán, Khán Bahadur, of whom we will speak again presently.*

A teacher was appointed for the boy chelas, his name was Káli Miyan Sháh. When a boy could read and write, he was taken before the Nawáb, who presented him with one hundred rupees, a shield, and a sword, by way of *khila't*.

From among the chelas of eighteen to twenty years of age, the Nawáb selected five hundred youths, and trained them as a picked regiment. They had firelocks of Lahore, accoutrements of Sultáni broad-cloth, powder-horns each holding two and a half seer of powder, and each a pouch with one hundred bullets. One day, they were drawn up along the Jamna bank under the fort at Delhi while the Emperor was seated on the fort wall, with Muhammad Khán standing in an attitude of respect beside him; Muhammad Sháh ordered them to fire at some moving object in the river, and was so delighted with the good practice they made, that he asked for a gift of the whole corps. Muhammad Khán made the objection that they were a lot of Bráhmans and Rájputs, who could do nothing but talk a rustic *patois* and use their swords. The Emperor accepted the excuse, and sent one thousand rupees to be distributed.

The names of the principal chelas, with any facts known about them, will now be given.

* Only one or two other chelas founded any *ganj*, and the fact will be mentioned under each man's name.

1. YÁKUT KHÁN, KHÁN BAHÁDUR.

On the day after the battle, in which Sayyad Abdulla Khán was taken prisoner, 'Azim Khán Bará Khail, a friend of Muhammad Khán's, presented him with a eunuch whom he named Yáqut Khán, and he obtained for him from Muhammad Sháh the title of Khán Bahádur. Yáqut Khán is said to have held the office of Názir. On his seal were the words—

Yáqut surkh-rú ba-ṭufail-i-Muhammad ast.

In his case, the Nawáb removed the prohibition against building or founding towns, saying that as he had no children it did not matter. Seven *ganjes* were founded by Yáqut Khán.

1. Kásganj, also sometimes called Yáqutganj. It is now the most important town in the Eta district with, in 1872, 15,764 inhabitants. It lies nineteen miles N. of Eta.*

2. 'Aliganj, in parganah 'Azimnagar of the Eta district, 34 miles E. of Eta, and about 30 miles N. W. of Farrukhábád. The date of the fort is 1143 H. (6th July 1730—25th June 1731), and the mason Muhammad Adam "Muhammad Kháni" appears to be the same as the man mentioned at p. 278, who built the fort at Farrukhábád.†

3. Kauriyaganj. The only identification I can suggest for this place is the Kauriyaganj in parganah Akrabád of the Aligarh district, 12 miles from Aligarh.‡

4. Khudáganj, on the left bank of the Kálinadi, in parganah Bhojpur of the Farrukhábád district, on the main road to Cawnpur, 17 miles S. E. of Farrukhábád. The ancient name of the village was Sanauli. Yáqut Khán, besides the bazár, built a masonry *sarác* with a high gate, and a mosque. The date on the gateway was 1152 H. (30th March 1739—18th March 1740);§ it was removed in 1855-6 to make way for the metalled road to Fatehgarh.

5. Nabiganj. This is a small bazár on the Grand Trunk Road, in the parganah of Kishni Nabiganj in the Mainpuri district. It lies about half way between Bewar and Chibramau.||

6. Yáqutganj. This town is in parganah Bhojpur of the Farrukhábád district, about seven miles S. E. of the city of Farrukhábád. Kali Ráo

* Gaz. N. W. P. IV, 152.

† Gaz. N. W. P. IV, 110. The date, 1747 A. D., must be wrong, if the date in the Persian inscription, 1143 H., is correct.

‡ Gaz. N. W. P. II, p. 572.

§ Káli Ráo, p. 133.

|| Gaz. N. W. P. IV, 746.

(p. 133) says five villages were absorbed: (1), Jakhá; (2), Jyáuti; (3). Muḡarrabpur; (4), Mustafábád *alias* Ganwaganw; (5), part of Nagla Khem. The place used to be called Sarái Núri, from Miyan Núri Sháh, a faqir, or as some say a eunuch, who built it. In Yáqút Khán's time the site had become deserted; he built a masonry *sarái* and changed the name. There is still an old masjid, bearing the following inscription:

Masjid-i-'ali biná ráhat fízá
Az laṭáfat Núr Bakhsh-i-Faiz-zá
Sál tárikh-ash Khirad guft andar ín
 "Farz adá shud andar án bahr-i-Khudá."

This gives the year 1086 H. (March 1675—March 1676).

7. Daryáganj, in parganah 'Azimnagar of the Eta district, on the Aliganj and Patiáli road, 28 miles N. E. of Eta. The remains of a large brick fort built beneath the old bank of the Ganges are still to be seen.*

The chelas of former days used to say that Miyan Khán Bahádúr spent twenty-five lakhs of rupees on these gunges, his house, and the *bághs* he planted. The house in which Bakhshi Fakhr-ud-daula used to live was built by Khán Bahádúr; and he planted the Kálá Bagh, and built in it the Bárahdari where Nawáb Muzaffar Jang (1771—1796) was interred.

YÁQÚT KHÁN lost his life with his master, Káim Khán, in the disastrous battle of November 1748, fought with the Rohelas at Dauri Rasúlpur near Budáon. The tradition is, that his elephant carried off his dead body to 'Aliganj, and that he was buried there. His tomb is in the midst of an enclosure lying at the foot of the fort, surrounded by a low wall of block kunker. At the foot of his tomb is a mound which is, tradition says, the burial-place of his elephant. The tomb with its well-preserved enclosing walls forms, together with the handsome frontage of the ruined tomb on the high mound above, the chief feature of interest in the place.† In the statement, on the page just cited, that Yáqút Khán was originally a Katiya Thákur of Angraiya, I suspect there is some confusion between him and another chela, Bázh Bahádúr Khán. At p. 154 of the Gazetteer, we are told Khán Bahádúr had no issue, which is probably true, as he was a eunuch. Yet at p. 69 we hear of his son, Bakhtbuland Khán. In Káli Ráe's "Fatehgarh Náma", p. 108, line 15, the Kesri Singh Katiya of Angraiya, who became a Muhammadan, is said to have borne the name of Bázh Bahádúr Khán, and it is he who was the father of Bakhtbuland Khán, and not Yáqút Khán, Khán Bahádúr.

2. DALER KHÁN. We have already given an account of this chela at p. 286. There is a Dalerganj called after him. It lies 9 miles N. W. of Farrukhábád, on the road to Káimganj.

* Gaz. N. W. P. IV, p. 218.

† Gaz. N. W. P. IV, p. 110.

3. SHAMSHER KHÁN. In 1720-1 he was appointed 'amil of the parganahs of Budáon, Sâhaswán and Mihrábád (see p. 283). At one time he had charge of the parganahs of Musenagar, Bilhor, Akbarpur, Shâhpur and Kanauj, all, except the latter, now in the Cawnpur district. Abdul Mansúr Khán Safdar Jang on his way from Faizábád to Delhi crossed the Ganges at Nánámau ghát in parganah Bilhor. Shamsheer Khán said that Safdar Jang's advanced tents should not be pitched within his jurisdiction, unless compensation were paid for any damage caused to the crops. This order displeased Safdar Jang, and halting, he despatched a camel rider to Farrukhabád with a letter to this effect: *Nawáb námddár salámat, Shamsheer-i-khud rá dar miyán bakun, wagarna áb na khwáhad mánd.* "Respected Nawáb, greeting! put up your sword (*shamsheer*) in its scabbard, else it will lose its edge." Muhammad Khán ordered Sâhib Râe, his scribe, to write an answer to match. The Munshi wrote thus on the back of the note, *Nawáb námddár salámat, in shamsheer mardán dar ma'rah-i-maidan be-khún chashdáah ba-mián na miáyad.* "Respected Nawáb, greeting! this sword, till it has tasted blood in battle, never returns to its sheath." Safdar Jang, on receipt of this reply, wished to attack Shamsheer Khán at once. His courtiers dissuaded him, pleading the displeasure of the Emperor, adding that if he won, it would be said he had fought a slave, while if he lost, he would be dishonoured for ever. Accordingly he left the neighbourhood at once, and went on to Delhi. Shamsheer Khán caused the rear guard to be plundered. It is said that the ill-feeling between the rulers of Lakhnau and Muhammad Khán's family commenced from this trivial quarrel. On Shamsheer Khán's seal were the words *Nigahdár, ai Muhammad, áb-i-shamsheer.* He played a principal part in the events following the death of Nawáb Káim Khán; he was one of the five chelas arrested and sent to Delhi, where he was executed in 1750, as will be more particularly related hereafter. His sons were: 1, Hasan 'Ali Khán; 2, Rahm 'Ali Khán; 3, 'Umr 'Ali Khán; 4, Kázim 'Ali Khán; 5, Rasúl 'Ali Khán. There is a Shamsheerganj, called after him, in parganah Bewar of the Mainpuri district.

4. MUẖÍM KHÁN. This chela held Ujjain during the time Muhammad Khán was Subah of Málwá. He was one of the five sent in custody to Delhi by Safdar Jang and there executed. The motto of his seal was—*Nuh falak az nám-i-Muhammad Muẖím.* He was with the Nawáb from his early days, and the Bibi Sahiba observed no *pardah* to him. His sons were—1, 'Azim Khán, 2, Hasan 'Ali Khán.

5. JA'FAR KHÁN. He was the Nawáb's Bakhshi. His house was near the *Tukya* of Muhammad Zamán Sháh, a faqir brought by Nawáb Ahmad Khán from Delhi; it was afterwards occupied by Nawáb Himmat Bahádur. He was another of the five chelas executed at Delhi. There is a Bazarya Ja'far Khán in the city called after him.

6. **ISLÁM KHÁN.** One of the five principal chelas executed at Delhi. There is an Islámganj in parganah Bhojpur; and parganah Amritpúr in the Farrukhábád District is also called Islámganj, but whether after this chela or not, I do not know. He had a son named 'Usmán Khán.

7. **SARDAR KHÁN.** He, too, was one of the chelas executed at Delhi.

8. **DÁUD KHÁN.** He is said to have been originally a Bráhmaṇ. He was one of the chelas, with the Nawáb in his younger days, to whom the Bibi Sahiba observed no *pardah*. We have seen him employed to take a rebel Rájah to the Emperor in 1713-14 (see p. 275). In 1720-1 he was appointed 'amil of parganah Shamshábád. He had charge of the collections of Jaunpur and Banáras, when the subah of Allahábád was under the Nawáb, and he acted as náib faujdár of Sárangpur in Málwá. Dáudganj, in parganah Azimnagar of the Eta district, was founded by him.

9. **BHÚRE KHÁN.** A story told of this man shows the amount of license accorded to these chelas. One day Bhúre Khán, coming into darbár late, could find no place to sit. Kicking away the pillow separating Muhanmad Khán and Káim Khán, he sat down between the Nawáb and his son. Káim Khán turned angrily to his father, and said "You have given such freedom to these chelas that they will never respect me." Muhammad Khán replied that he loved them as he did his sons. Káim Khán got up in a rage, and went off to his home at Amethi. Muhammad Khán then scolded Bhúre Khán, saying, that he had lost confidence in him, for if while he was alive they did not respect his sons, who knew what they would do when he was dead. Bhúre Khán putting up his hands, said "May God Almighty grant that I never see the day when you no longer live." He was the Nawáb's deputy in the Súbah of Allahábád. He was killed in 1728 in the battle against Rájah Chattarsál at Ichauli. (See p. 290.)

10. **SA'DAT KHÁN.** He was 'amil of Mandeshwar* in Málwá, south of Nímach, during the time the Nawáb held that subah. His seal bore the words *Be lutf-i-Muhammad Sa'dat na búd*. A grandson, Imám Khán, lived in Shaukat Jang's time (1813—1823) at the gateway of the Khás Mahál, and received an allowance of a rupee a day. Another descendant, Ghairat Khán, was alive in 1839, but so poor that he had not even food to eat. When Muhammad Khán quarrelled with Sa'dat Khán Burhán-ul-Mulk, Subahdar of Audh, he gave his chela, Sa'dat Khán, the ironical title of Burhán-ul-Mulk. The revenues of the Gwáliár country, then under immediate charge of 'Umr Khán Gwáliári, were paid in at Mandeshwar.

11. **NEKNÁM KHÁN.** He was one of the four chelas to whom the Bibi Sahiba used to appear unveiled. He had the charge of the buildings at Farrukhábád; his masjid and well, fort and *bágh* still existed in 1839;

* Thornton, 645. In Scindiah's territory and the chief place of a parganah. It lies 350 miles S. W. of Gwáliár and 80 miles N. W. from Ujain.

he also built a mosque at Chibramau near the tomb of Sadr Jahán, the martyr, on the edge of the tank. His motto was, *Hastam az lutf-i-Muham-mad neknám*. We have seen him employed (p. 301) to extricate Káim Khán from the clutches of Sa'dat Khán Burhán-ul-Mulk at Faizábád. In 1720-1 he was appointed Amil of parganah Bhojpur, (see p. 283).

12. JAHÁN KHÁN. He was one of the Bakhshis, and an old chela to whom the Bibi Sahiba kept no *pardah*. He founded Jahárganj in parganah Bhojpur, on the road from Farrukhábád to Chibramau, about 9 miles S. of the former place. His son, Rahmat Khán, who was Bakhshi to Nawáb Ahmad Khán, built the masjid at the Mau gate of the city.

13. KAMÁL KHÁN. He is the founder of Kamálganj on the Cawnpúr road, 9 miles south-east of Farrukhábád. In 1720-1 he had charge of Sipri and Jalaun (see p. 283). He was killed with Nawáb Káim Khán in the battle of Dauri.

14. ROSHAN KHÁN. The Haiyát Bágh and the building of the Nawáb's tomb were under his charge (see p. 337). There was a Roshanganj, named after him, somewhere on the road to Chibramau, but the site is not known.

15. DILÁWAB KHÁN. He had the epithet of the "Janúbi" (the southern) and was Darogha of the Diwán Khána. He must be the same as the man styled in one place "the Aurangábádi."

16. PURDIL KHÁN. He was a son of the Gaur Rájah of Siroli (see p. 278). He was Darogha of the camel establishments.

17. FAKHR-UD-DIN KHÁN. He held the office of Bakhshi of the army, and was also styled Fakhr-ud-daula. He played a prominent part on the accession of Muzaffar Jang in 1771, and was náib till his assassination a year afterwards. He is buried in the Bihisht Bágh near the Mau gate, in a separate tomb, a little to the left as you enter the gateway.

18. 'ALÁWAL KHÁN. He was originally Kesri Singh, son of Chattar Singh, a Bamtela Thakur of the village of Baraun, and some of his descendants still exist in that village and Bábarpúr.* This man is said to have been a bit of a wag. Once Muhammad Khán appointed him 'Amil of some parganah. On starting to take up his duties, 'Aláwal Khán mounted with his face to his horse's tail. The Nawáb called out to ask the scoundrel what he meant by riding like that? His answer was, "I am looking behind me to make quite sure the Nawáb Sahib is not sending off another 'Amil just behind me." The allusion was to the frequent changes of 'Amils, no one being longer than two or three months in one parganah. Dismissals and appointments were constantly occurring. On hearing the above answer, the Nawáb said, "Tell that buffoon that he is appointed for a year."

* Káli Ráe, p. 120.

19. RUSTAM KHÁN. He was killed with Káim Khán in the battle of Dauri (1748).

20. 'ABD-UR RASÚL KHÁN. He was killed in 1728 at the battle of Ichauli, (see p. 290).

21. HÁJÍ SARFARÁZ KHÁN. He was one of Ahmad Khán's Bakhshis, and he will be mentioned in the Allahábád campaign, and in the retreat to the hills.

22. JÁN NISÁR KHÁN. He held charge of Ujain in Málwá as the deputy of Mukím Khán. Having incurred the Nawáb's displeasure he was flogged, and being very frail he died at the first stroke.

23. RAHMAT KHÁN. There was a Rahmatganj founded by him, but its site is not known now. He was distinguished as "Sawárahwála," and commanded a cavalry regiment.

24. KARIM KHA'N. He was Darogha of the elephants; his seal bore the inscription *Ba fazi-i-Muhammad Karm námáár.*

25. JOWÁHIR KHÁN. He was Darogha of the stables.

26. SALÁBAT KHÁN. He was the "Mír 'Imárat" or superintendent of buildings.

27. SHAMSHER KHÁN, II. He had charge of the poultry.

28. MAHTÁB KHÁN. Darogha of the kitchen.

29. NÁMDÁR KHÁN. He was a Gahilwár Thákur of the village of Chilsara, parganah Shamshábád West, and his descendants still live there. A mosque built by him still stands, and to the west of the village are the foundations of some ganj or fort once belonging to him.

30. NÁMDÁR KHÁN, II. 31. Sulaiman Khán. 32. Khushyál Khán. 33. Fulád Khán. 34. Nasir Khán. 35. Sherdil Khán, a converted Tomar Rajput. 36. Náhirdil Khán. 37. Hafizullah Khán. 38. Lutf-ullah Khán. 39. Bakhtbuland Khán. 40. Lál Khán. 41. Mashraf Khán. 42. Mubárik Khán. 43. Najm-ud-din Khán. 44. Ranmast Khán. 45. Bára Khán. 46. Pahár Khán. 47. Naqqi Khán.

The Nawáb's territory.

We do not know precisely how the large territory, of which Muhammad Khán was at his death *de facto* ruler, had been acquired. A grant in *jágir* of the parganahs of Shamshábád and Bhojpur in the first year of Muhammad Sháh's reign (1719) may have formed the nucleus; as for the rest

"The good old rule

Sufficeth them, the simple plan,

That they should take, who have the power,

And they should keep who can."

The extent of the Nawáb's dominions was popularly described by the following doggrel verse—

Y Y

Miyan do áb o miyan do káf
Shuda hásil in mulk jumla mu'áf
Shavand kasba-i-Kol o Korá hadúd
Ba daryáe Gang o Jaman insaráf.

There is a certain amount of exaggeration in the east and west boundaries thus given, and the parganahs across the Ganges are ignored. Taking the existing division into districts, one may say roughly that Nawáb Muhammad held the western half of the Cawnpur district, the dividing line being drawn from Bithúr on the Ganges to Musenagar on the Jamna; the whole of the Farrukhábád district; all of the Mainpuri district except perhaps one parganah; the whole of the Eta district, except two small parganahs in the north-west corner; nearly one half of the Budáon district across the Ganges; and one parganah of the Sháhjahánpur district. If the Kauryaganj founded by Khán Bahádur be correctly identified with the town in the 'Aligarh district, then the Nawáb's authority did extend within twelve miles of Kol-'Aligarh. The local tradition states that parganah Márahra in the Eta district was obtained in farm from the Sayyad jagirdárs in 1738,* but the mode of acquisition was most probably a little less legal than through a farming lease. We know from the Life of Háfiz Rahmat Khán† that Muhammad Khán held Budáon, for it was while on an expedition with the Farrukhábád 'Amil against some zamindárs, that Dáud Khán caused Sháh Álam Khán, the father of Háfiz Rahmat Khán, to be assassinated.

The anecdotes already given show that the Nawáb kept a very strict watch upon his agents, moving them frequently and prohibiting them from building permanently. In this way he seems to have kept complete control over his country and his orders were implicitly obeyed. The following notices are gleaned from Sáhib Ráe's collection of the Nawáb's correspondence.

KANAUJ. In the second year of Muhammad Sháh's reign (Feb. 1720 to Jan. 1721) the faujdári of this Sarkár was in the name of the Nawáb's son, Káim Khán. Then, when Rájah Girdhar Bahádur was removed from Allahábád, he begged for a territory near his house as a residence for his dependents. The faujdári of Kanauj was then relinquished to Girdhar Bahádur. After his death it passed from one to another till the Bhadauriya Rájah obtained it. When Muhammad Khán was restored to Allahábád in the year 1148 H., he objected strongly to leaving his home country in the hands of a "hypocritical infidel." The *jágir* was therefore granted to him. The nett income he states at Rs. 8000 a year. The old *jumma* payable to the Imperial Treasury was 35,00,000 of *dám*, but after enhancement it had been raised to one *kror* of *dám*.

* Gaz. IV, 158, 162.

† See p. 9.

SHÁHPUR. Muhammad Khán held this parganah before he went to Bundelkhand in 1139 H. (Aug. 1726—Aug. 1727). It was then resumed as part of the *khálas* or crown-lands and a grant was made for only one harvest. The Nawáb held the parganah, however, for several years, after which it was again resumed. Through the intercession of Khán Daurán Khán, it was on the 10th Ramzán 1145 H. (13th Feb. 1733) granted permanently from the Rabi harvest of 1140 F. (March 1733). This being a border district, some difficulty was caused by defaulters taking refuge in the estates of Rájah Hindu Singh of Chachendi.

ITÁWAH. In the later years of his life Muhammad Khán was faujdár of Itáwah. He was displaced by Ráj Adhiráj Jai Singh Sawáe about 1153 H. (March 1740—March 1741).

JALESAR. Through Rájah Jai Singh Sawáe, a lease in Yáqut Khán's name was obtained of Kokaltásh Khán's *jágirs* in this parganah. This produced an objection from Násir-ud-daula Sádát Khán Zu'lfiqár Jang, and the Emperor addressed a *farmán* to Muhammad Khán, dated the 2nd Zi'l Ka'd of the 24th year (30th Dec. 1741). The lease was then relinquished.

SAUJ and ALI-KHERA. The former was the *jágir* of 'Amír-ul-Umrá, Khán Daurán Khán; the latter that of Farrah Khán Bahádur and Muhammad Khán Bahádur.

BARNAH SOHÁR with a revenue of ten lakhs of *dám* was taken on *ijára* or lease by Yáqut Khán from the *jágirdár*.

NIDHPUR, AKBARÁBÁD, and SIKANDARPUR are mentioned as in the possession of the Nawáb. In one year the estimated revenue of Akbarábád and Sikandarpur was put at 65,000, or at the outside 70,000 rupees. In 1146 F. (1738-9) there appears to have been a drought.

KOIL and SIKANDRAH are stated to have been in the Nawáb's possession in 1146 F. (1738-9).

SAKÍTH must have been included in the Farrukhábad territory, since Muhammad Khán was called on to furnish an escort for treasure coming from Jinnat-ul-bulád, Bangál. The revenue of Sakíth is stated to have been one lakh of rupees, besides the *jágirs* farmed to the faujdár of Itáwah.

KURÁOLI. Káim Khán received 17 or 18 lakhs of *dám* from this parganah as payment on account of the faujdári of Kanauj.

SHIKOHÁBÁD. This parganah appears to have been held as a dependency on Itáwah, in which Karhal does not appear to have been included.

BHONGA'M and TÁLTIGÁM were in 1726 in the *jágir* of Khán Daurán Khán.

ANWALAH. This parganah was at one time the *jágir* of 'Umdat-ul-Mulk 'Amír Khán.

Muhammad Khán's wife and children.

The Nawáb seems to have had but one legal wife, Málaha Bánú or Rába'ha Bánú, *alias* the Bíbi Sáhíba, daughter of Kásim Khán Bangash. She has been often mentioned already, and will be often mentioned again. She had two sons, Káim Khán, the second Nawáb, and Dáim Khán, who died in childhood; also two daughters, Roshan Jahán, wife of Roshan Khán Bangash, and another who died unmarried. She died on the 28th Zí'l Qa'd 1182 H. (5th April 1769), and was buried in a separate tomb in the Bihisht Bágh a little to the south-west of Nawáb Ahmad Khán's mausoleum. There is a handsome masjid in the city built by her, called the *Bíbi Sáhíba ki masjid*, and the quarter round it is known by that name. There is also a Muhalla Bibi ganj near the Mau gate.

The unsettled times of the 18th century are reflected in the fact that seven sons of Muhammad Khán were killed in battle; nine died deaths of violence, and only six died a natural death. The names of the sons (whose descendants will be given in an Appendix) are as follows:

1. Káim Khán, succeeded his father as Nawáb (1743—1748) as will be related hereafter. He left no issue.
2. Ahmad Khán, succeeded in 1750 and died in 1771.
3. Muríd Khán. Full brother of Murtazza Khán (No. 4). He was killed with Káim Khán, leaving three sons.
4. Murtazza Khán. He was cut down at the order of Muzaffar Jang, son of Ahmad Khán (No. 2), and he died a prisoner in the Mubárik Mahál within the fort. He left seven sons.
5. Akbar Khán. He was killed at Sikandra Ráo (see p. 334). He left two sons. They say that the daughter of one of these sons, Khan-Khánán Khán, was betrothed to Sa'dat 'Ali, son of Shuja'-ud-daula, Nawáb Wazir, but Nawáb Ahmad Khán forbade the marriage, unless the Lakhnau family gave a wife for his son, Mahmúd Khán.
6. 'Abd-un-nabi Khán. He was killed with Káim Khán. When 'Abd-un-nabi Khán started for the campaign with Káim Jang, he sneezed as he mounted his elephant and a cat crossed his path. From these evil omens, it followed that Nawáb 'Abd-un-nabi Khán never came back alive. His son, 'Abd-ul-Majíd Khán, from that day took an aversion to the name of sneezing and to cats. If a servant felt inclined to sneeze, he rushed out of the house, nor did any servant ever dare to utter the word "cat." If absolutely necessary it was referred to as a "fish." They also had strict orders never to mention any one's death. If their master were invited to a friend's house on his death, they told him that sugar had been tasted at a certain house, referring to the practice of pouring sugar and water down a dying man's throat. If they had to remind him of the third-day ceremonies, they would say—"To-day there is a great display (*dhum-dhám*)."

Whenever Nawáb 'Abd-ul-Majíd Khán went out, he gave his khánsámán several rupees with instructions to give one to Mayá Rám Baniya, a man who kept a shop at his gate, in order that he might present it as a *nazar* on the Nawáb's mounting, for it was a good omen. He also sent four annas to a gardener for a garland and flowers, to be given as he started. Several rupees were changed into *kauris*, which were divided into two-*paisa* lots. Orders were then given to the khánsámán to warn the troops, as the Nawáb Sáhib was coming and required an escort. Accordingly the khánsámán told all the tenants of the Nawáb's houses that the Nawáb was coming. They were of all castes high and low.

The Nawáb then mounted a horse adorned with silver trappings, a khidmatgár waved a *chaunri*, while some four to eight companions followed on ponies. When the Nawáb reached his gate, Máýá Rám Baniya presented the rupee. The *pán*-seller gave a *dona* of *pán*, of which the Nawáb ate some, and gave the rest to the khánsámán. Then the gardener offered the flowers, from which the Nawáb selected one and stuck it in his turban. When he came back, he directed the khánsámán to dismiss the army for that day. On each man present a *taka* in *kauris* was bestowed, and with a *salám* to the Nawáb they went away.

When any of the younger men of the Sáhibzádah families visited 'Abd-ul-Masjíd Khán, it was a favourite joke to tickle their nostrils with a straw and produce an artificial sneeze. They would then ask for pardon. But 'Abd-ul-Masjíd Khán would only get the more angry, and request them never to come near him again. Then the Sáhibzádahs would hold their handkerchiefs to their faces to conceal their smiles.

7. Husain Khán. Executed at Allahábád by orders of Safdar Jang.

8. Fakhr-ud-din Khán. One account says he was killed with Káim Khán, another that he was one of the five sons executed at Allahábád. He left one daughter.

9. Ismá'il Khán. He left four sons. He was one of the five executed at Allahábád.

10. Karim Dád Khán. One of the five executed at Allahábád. He left two sons.

11. Imám Khán. He was named by the Bibí Sáhiba as Káim Khán's successor, and he was reigning Nawáb for five months and some days. He was arrested and sent to Allahábád, where with Nos. 7, 8, 9 and 10 he was executed in 1750 by orders of Safdar Jang. He left two sons.

12. Khuda Bandah Khán, or in some MSS. Khudáwand Khán. In some lists he is placed fourth, but this seems to have been done to flatter his son, Amin-ud-daula, who as náib was all powerful from 1786 to 1803. Khuda Bandah Khán died at his fort in Delhi on the 9th Zi'l Hajj 1194 H. (7th Dec. 1780). His *jágir*, obtained on his daughter, Umráo Begam's,

marriage to Nawáb Muzaffar Jang, was the parganah of Sakráwa. He left one son.

13. Mansúr 'Ali Khán. He had one daughter.

14. Hádídád Khán. Killed with Káim Khán, leaving no issue.

15. Bahádur Khán. He also was killed with Káim Khán; he left two sons.

16. Shádi Khán. He was killed by a cannon shot at the siege of the Fatehgarh fort by the Mahrattas in April—May 1751. He left no issue.

17. Salábat Khán. He was living in 1802; he had four sons.

18. Manavar Khán. He left six sons.

19. Muḥammad Amín Khán. He gave abuse to some zamindár, who thereupon cut him down with his sword. Miyán 'Alím-ullah Sháh Pírzáda, who lived in Ján 'Ali Khán's masjid at the gate of the fort, cut down the zamindár. Amín Khán left two sons.

20. 'Atá-ullah Khán. He was shot by mistake by Roshan Khán Bangash Ustarzai, son-in-law of Muhammad Khán, one day that the Nawáb was out tiger-shooting in Bahbalpúr Sawárah.*

21. 'Azim Khán. He survived the Cession and left ten sons.

22. Sháistah Khán. He also was alive in 1802, he left one son.

In the time of 'Alamgír II. (1754—1759) Nawáb Ahmad Khán attended for two years at Court, and performed his duties as Bakhshi of the empire. While he was away, Sháistah Khán set up an imperial throne in his house and made a *gulál bári* in imitation of the Emperor's audience hall. He ordered his servants to make him obeisance as if he were Emperor. Several thousand rupees were also coined, worth seventeen annas each, with the legend—

Sikka zad dar bahr o bar az auj máhi tá bamáh

Šáni Tuimúr o Bábar, Hazrat i Sháistah Sháh.

Sending one of the rupees, Bakhshi Fakhr-ud-daula reported all this to Ahmad Khán. Alarmed lest the Emperor might hear of it, he ordered the Bakhshi to take away Sháistah Khán's *jagír*, to seize and destroy all the rupees he could lay hands on, and to imprison the Sábibzáda in the fort. It was only after many months that Sháistah Khán was set at liberty.

The daughters of Muhammad Khán.

It is said that the late Amír Dost Muhammad of Kábul had so

* The MS. says near Kádírganj, which is in the Etá District near the Ganges, some 45 miles N. W. of Farrukhábád (Gaz. IV, 151) while the place meant is in the Tarái between the Burh Ganga and the Ganges, four or five miles west of Kampil, nine or ten miles from Kádírganj, and some 35 miles N. W. of Farrukhábád. There is good shooting there still, but no tigers.

many sons that he did not know them all by sight, so when he met any well-mounted and well-dressed youth, he would ride up and ask him whether he was his son or not. A somewhat similar anecdote is related of Nawáb Muhammad Khán. One day seeing a married daughter in the women's apartments, he turned to the Bibí Sáhíba and asked what wife (*maḥal*) it was. The Bibí Sáhíba gave him one or two slaps on the back, and replied "What do you mean, she is one of your daughters."

The daughters who grew up and were married were—

1. Bibí Roshan Jahán, the full sister of Káim Khán. She was married to Roshan Khán Bangash Ustarzai, but had no issue. She founded the bazár of Roshanábád, parganah Shamsahábád West, on the old road, nine miles north-west of Farrukhábad. There is a small mosque, now rapidly falling into decay, the inscription on which has gone; and a well close by with a stone let into the side on which a few words only can be now deciphered. In 1846 it was read as follows:

Cha sharín áb-i-cháh-i-Roshanábád.

Káli Ráe (p. 113) gives the date as 1149 H. (1st May 1736—20th April 1737). She is also called the "Shahr kí Bibí," and the villagers still believe in her power of exorcism. She is said to have been buried in Kásim Khán's tomb in the Kásim Bágh at Fatehgarh (see p. 276). She had one full sister who died unmarried, aged twelve or thirteen.

2. Bibí Rahmat-un-nissa. She was married to 'Ináyat 'Ali Khán after the death of his wife, Bibí Fátima, daughter of Himmat Khán and niece of Muhammad Khán. This daughter had no full blood brother. She was the mother of (1) Sultán 'Ali Khán, (2) Rustam 'Ali Khán.

3. Karím-un-nissa. She became the wife of the above 'Ináyat 'Ali Khán after the death of Rahmat-un-nissa (No. 2). She had no full brother. Her sons were (1) Murád 'Ali Khán, (2) 'Azim Khán.

4. (Name unknown) wife of her cousin, Shuja't 'Ali Khán, son of 'Ináyat 'Ali Khán (see above Nos. 2 and 3), by his first wife, Bibí Fátima. This daughter had no full blood brother nor any sons.

5. Bhúrí Khánum, wife of her cousin, Muhammad 'Ali Khán Bangash, full brother of Shuja't 'Ali Khán (see No. 4). She had no full brother, she was the mother of (1) Amír 'Ali Khán, (2) Kuṭb 'Ali Khán.

6. Begamá Sáhíba, wife of Irádat 'Ali Khán Bangash, son of Shuja't 'Ali Khán. She had neither full brother nor offspring.

7. Bibí Káfiya, full sister of Isma'il Khán (No. 9), and Sháista Khán (No. 22), and wife of Rustam Khán Bangash. She had no children.

8. (Name unknown) wife of Mustáffa Khán and full sister of No. 7. She had no children.

9. Bibí Daulat Khátun. She married Khudá Dád Khán, Bangash

Ustarzai Karláni, and was the great-grandmother of Manavar 'Ali Khán, one of the joint authors of the "Lauh-i-Tárikh." The family tree is

Khuda Dád Khán = Daulat Khátun

Sikandar 'Ali Khán

d. 12th Sha'bán 1195 H. (16th July 1781)

Sarfaráz 'Ali Khán

d. 5th Shawwál 1238 H. (15th June 1823)

Manarar A. K. Haiyát	A. K. Husain A. K.	Sa'dat A. K.	Shuja't one
b. 1798 d. 1863			A. K. daughter

She is said to have been very generous and charitable. It was at her expense that the tomb of her father, Muḥammad Khán, in the Haiyát Bágh was repaired. She became a disciple of 'Atá Karím Sháh of Salon.* When Nawáb Muzaffar Jang stopped all the family pensions, she went to Delhi, and the Emperor made over to her the income of Bangashghát. On Muzaffar Jang's entreaties she returned, and received in *jágir* the village of Barna Khúrd, parganah Bhojpúr, 900 *kacha* bigahs in Khandiya, parganah Kampil, and the Tárwála Bagh or Naulakha. When her son Sikandar 'Ali Khán died, she turned *fagir*, wearing only white clothes or in winter a blanket. She was very humble-minded and spent her time in spinning or in praying at her son's tomb. Among her other accomplishments she understood brick-laying and carpenter's work. We hear of her tending the bruises of Káim Khán's widow after the assault on the Amethi fort in 1772-73 (see Part II).

She was excessively fond of her great-grandson, Manavar 'Ali Khán, and never allowed him to be for a moment out of her sight. When he was five years old, she married him to the granddaughter of Sanjar Khán of Rudáin, parganah Kampil, and obtained for him from Nawáb Násir Jang (1796—1813) an allowance of ten rupees a month.

One day she returned to the Bará Mahal from the house she was building in Bangashpura, on the site given her by her father at her marriage. When she got out of her conveyance she at once asked for a drink of water. Her slave girls having conspired to poison her, brought poisoned water in a fresh vessel. She drank and then Manavar 'Ali Khán. The latter vomited at once and so recovered. Daulat Khátun did nothing, as no traces of poison betrayed themselves. At length when the poison showed itself, every remedy was resorted to without effect. In the evening her bed was brought out, and her grandson, Sarfaráz 'Ali Khán, with his own hand gave her some

* On the Sai about 20 miles S. E. of Ráo Bareli in Audh.

medicine, but as her teeth were clenched, it could not be got down her throat. She then expired. The date was the 17th Rabi I. 1224 (2nd May, 1809).

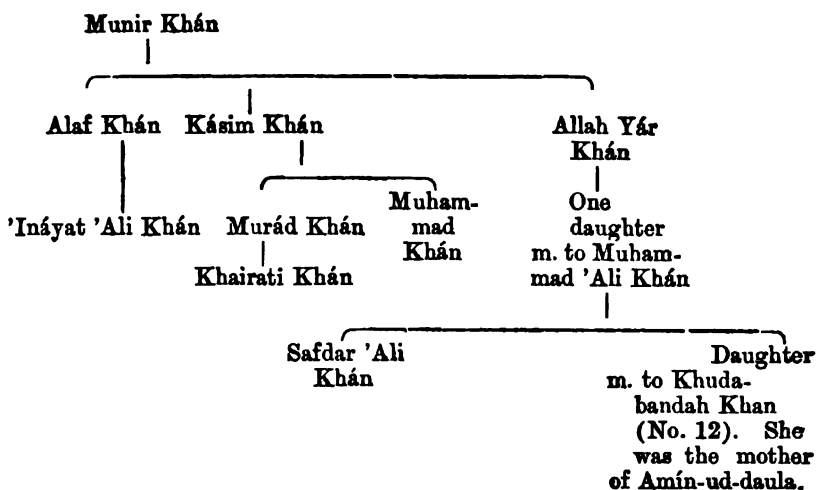
At once Nawáb Násir Jang and Sarfaráz Maḥal came to the dwelling where Daulat Khátun died, placed their own locks on all the doors, and stationed a guard at the gate, any one passing in or out was searched. Next morning Amín-ud-daula (son of Khudábandah Khán No. 12) came, and when she was bathed for interment he noticed that some one must have poisoned his aunt. However, he did nothing, and she was buried within her own house at Bangashpura. Násir Jang then confiscated all the property, and at the suggestion of Sarfaráz Maḥal stopped Manavar 'Ali Khán's allowance. Sarfaráz 'Ali Khán, the deceased's grandson, was then pressed to give a relinquishment on condition of receiving a *zi-hakka* pension; giving way to other's advice, he went and filed a *rázinama* in the Collector's Office.

Khuda Dád Khán, the husband of Daulat Khátun, quarrelled with his wife because she asked him to pay the usual visits of ceremony to the ruling Nawáb, Ahmad Khán (1750—1771). He left his home and went to the Dakhin, whence he kept up a correspondence by letter but never returned. There, in a city when Paṭhans dwell called Kirpá Khund or Kirya Khund (?), he married again. His son by that wife married the daughter of Wáhid 'Ali Khán Bangash of the same city, a man of high position. Although Khuda Dád Khán in the war with Holkar and Daulat Rám Sendhia had his shin bone injured by a bullet, he insisted on riding and refused to mount an elephant or take to a *palki*. Daulat Rám to honour him styled him Nawáb Sáhib, but he objected alleging that at Farrukhábád that title was given to slaves. Daulat Rám then addressed him as "Khán Sáhib." Khairáti Khán Bangash, Sher Muhammad Khán, Najíb 'Ali Khán, Nawáb Abd-ul-Karím Khán and Mír Nawáb were serving under Sendhia at that time.

10. Asálat Khátun, wife of Bangash Khán, full sister of 'Aṭá-ullah Khán (No. 20), and mother of Walí Muhammad Khán.

11. (Name unknown), wife of Yúsaf Khán and full sister to Mansúr 'Ali Khán (No. 13). She had no children.

12. Kámila Khánun, the wife of Murád Khán (*Maṣalle*) Bangash, son of the uncle of 'Ináyat 'Ali Khán above-named (husband of Nos. 2 and 3). She had no full brother. She was the mother of Khairáti Khán Bangash. Her husband's family was as follows :



Murád Khán was reputed to be very wealthy. At the battle of Dauri Rasúlpur in Nov. 1748, he received such severe wounds that he fell from his elephant in the battle-field. For three days he lay unnoticed among the corpses. At length a zamindár searching among the dead recognized him. As **Murád Khán** had once procured his release when kept in custody by Nawáb Muhammad Khán, the man went for a litter and carried the wounded Nawáb to his village, applied some remedies to his wounds and gave him food. When he was better they sent him back to Farrukhábad. **Murád Khán** had received eighty wounds in different parts of the body, and a sword-cut had so disfigured his nose, that he went by the name of the "Nakatta Pathán" or noseless Pathán. He also had a wound in his throat which had left a hole, and when he ate or drank he had to apply a wax plug.

13. (Name unknown), full sister of Karím Dád Khán (No. 10), and the wife of Khán 'Alam Khán.

14. (Name unknown), full sister of Bahádur Khán (No. 15), and the wife of 'Ali Dád Khán.

15. (Name unknown), full sister of Bahádur Khán. (No. 15), and the wife of Sardár Khán.

16. Sáhíb Khátun, wife of Johar Khán Bangash. She had no full brother.

17. 'Abida Khánum, daughter of of 'Arifa Khánum, and wife of Hurmat Khán Bangash. She had no full brother.

18. (Name unknown), wife of Bábar Khán.

19. Alif Khátun, wife of Hák-dád Khán Bangash.

20. Láqli Khánum, wife of Muhammad Khán Bangash.

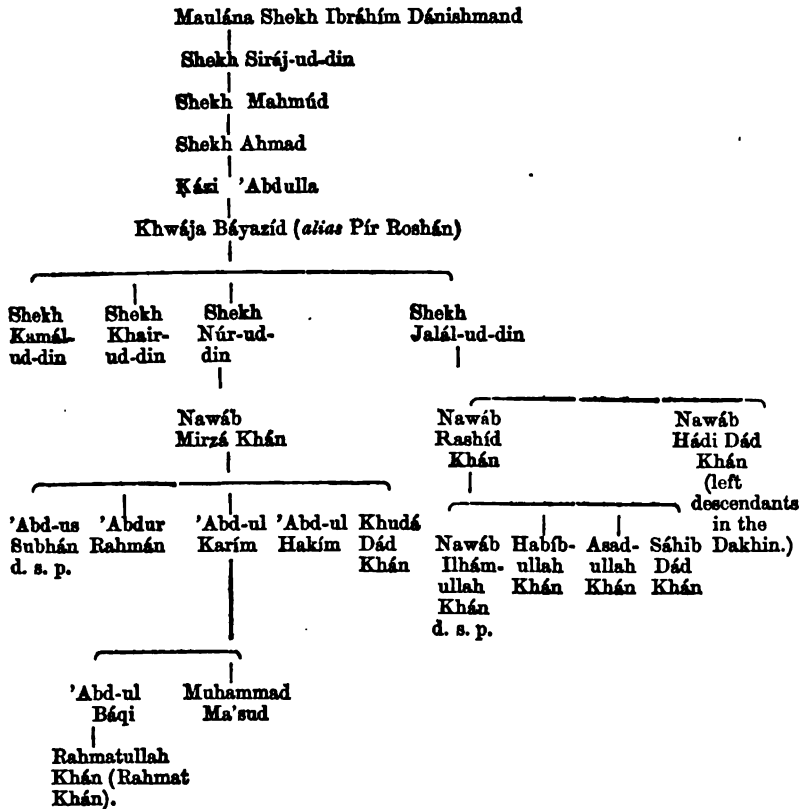
21. Khánúm Sáhíba, full sister of Murtazza Khán (No. 4). She died in youth unmarried.

22. Nanhí Bíbí, wife of Báẓ Khán Bangash.

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Note A.

RASHÍD KHÁN AND THE KHÁNẒÁDAS.

The few Khánẓádas, descendants of Rashíd Khán, now found in a state of poverty in Mau, state the descent of their ancestor as follows:—



Haiyát Khán, Lahor, Kohinúr Press, Sept. 1865, pp. 154, 155—158 and "Tárikh-i-Farishta," Lucknow edition, Vol. I, p. 266). For want of further authorities to refer to, Manzúr Ahmad was unable to identify Rashíd Khán, founder of Mau, with Rashíd Khán, son of the historical Jalála. From the "Maásir-ul-Umrá," however, it is made quite clear that the two men are the same (see in that work under "Rashíd Khán"). I proceed to give an abstract of the Biography from the "Maásir-ul-Umrá" adding from the articles "Allahdád Khán," "Asadullah," "Hádídád Khán" and "Rashíd Khán" in Kewal Rám Agarwálah's "Tazkira-ul-Umrá."

The founder of the Rosháni sect, called in derision the Tárikí or the obscure,* was Shekh Báyzázid who was descended in the seventh generation from Siráj-ud-din Anzári, and was born at Jálándhar one year before Bábar entered India (i. e., in 1527). On growing up he left his birth-place with his mother and went to his father 'Abdullah at Káli Kurm in the hills of Roh. In the year 949 H. (April 1542—April 1543), he became notorious by pretending to do miracles, through which he induced many tribes of the Afgháns to become his disciples. At this time he wrote a book in Pushtu called "Khair-ul-bayán." They say that when it was brought to the Court of Mirzá Muhammad Hakím, ruler of Kábul, the learned men there were unable to refute it. When Pir Roshán died he was buried at Tahyapúr (?) in the hills. He left four sons and one daughter. The sons are (1) Shekh 'Umr, (2) Núr-ud-din, whose son Mirzá Khán entered the Imperial service and was killed in the Daulátábád campaign in the Dakhin (most probably in February 1633),† (3) Jamál-ud-din, (4) Jalál-ud-din.

Jalál-ud-din in the year 989 H. (Feb. 1581—Jan. 1582), being then fourteen years of age, attended Akbar when that Emperor was on his return from Kábul. He was graciously received, but for some reason being dissatisfied he returned to his father's disciples among the Warakzais and Afrídis, to whom he was also related. In the 31st year of Akbar's reign (2nd April 1585—22nd March 1586), the Mahmand and Gharba, who lived round Pasháwar and could muster ten thousand horse, were aroused by the oppressions of the subordinates of Sayyad Hámid Bukhári‡ practised on the Tayúldars of that neighbourhood. They placed Jalála (Jalál-ud-din) at their head, attacked and slew Sayyad Hámid and then made Teráh their stronghold. Rájah Mán Singh§ Názim of Kábul advanced on Teráh and dispersed the Afrídis. He then went to 'Ali Masjid and inflicted considerable punishment on Jalála. Shortly after Zain Khán Kokah arrived, having been appointed to super-

* For notices of Jalála and the Raushánis see Blochmann's "Ain-i-Akbari," Vol. I, pp. 340, 345, 366, 361, 397, 403, 411, 469.

† Elphinstone, p. 608.

‡ Mr. Blochmann's "Ain-i-Akbari," Vol. I, p. 397.

§ 'Ain I, 339.

sede the Rájáh, and he made great efforts to uproot the rebels. In the 32nd year (23rd March 1586—12th March 1587), Jalála was forced to quit Teráh for Bijaur, the head-quarters of the Yúsafzai. Zain Khan* followed him up and posted 'Isma'il Kuli Khán† and Šádiḡ Muhammad Khán‡ to watch the passes. Jalála managed to elude them and return to Teráh. Šádiḡ Muhammad Khán, however, so troubled the Afrídís and Warakzais that they gave up Mullá Ibráhím, who was looked on by Jalála like a father. Jalála losing confidence made off for Túrán. The Afghans seized all his property and made it over to the imperial commander.

In the 37th year (20th March 1591—to 10th March 1592), Jalála returned from Túrán and again raised the standard of revolt. Asaf Khán Ja'far was sent by the Emperor to restore order. He defeated the rebel and captured his family. Asaf Khán made over Jalála's family to one Wahdat 'Ali.

In 1007 H. (25th July 1598—13th July 1599), Jalála took Ghazni but could not maintain his position. In the 45th year, 1007 H. (12th Sept. 1599—2nd Sept. 1600), Jalála who was in company with the Lohánis near Ghazni was surprised and wounded. Murád Beg, with some of Sharif Khán's troops, pursued and slew him.

The spiritual succession fell to Ahdád, son of Shekh 'Umr, Jalála's brother,§ who had married his uncle, Jalála's, daughter. In the reign of Jahángír (1605—1627) he gave the imperial troops much trouble, sometimes gaining the victory and sometimes being defeated. In 1035 H. (23rd Sept. 1625—11th Sept. 1626), Zafar Khán, son of Khwája Abúl Hasan, náib of Mirzá Intizám Bakhsh, Subahdar of Kábul, besieged his, Umr's, fort. On the day of assault a bullet struck him and killed him.

He was followed by his son, 'Abd-ul-Kádir, who continued the warfare. At length by the exertions of Sa'id Khán,|| Názim of Kábul, he was induced to submit to the Emperor Sháhjahán, from whom he received the rank of a Hazári. In 1043 H. (28th June 1633—17th June 1634), while employed in Kábul, he lost his life. In the beginning of the 11th year, in 1047 H. (18th Oct. 1637—7th Oct. 1638), Sa'id Khán sent to the Emperor's Court his mother, Bibi Aláe (the daughter of Jalála),¶ with her two sons-in-law (1) Muhammad Zamán, (2) Sáhíb Dád, and (3) Kádir Dád, the son of

* 'Ain I, 344.

† 'Ain I, 360.

‡ 'Ain I, 355.

§ The Mau tradition is that he was no relation, but usurped the succession.

|| 'Ain I, 466.

¶ A *sanad* dated 15th Zi'l Ka'd of the 12th year, 1048 H. gives *Jamál Khátun* as the name of 'Abd-ul-Kádir's wife.

Muhammad Zaman. The Emperor took pity on them and sent them on to Rashid Khan, who was then in Talingána.

In the same year Karim Dád, the younger son of Jalála, who was leading a wandering life among the Lohánis, was sent for by all the tribes in order to renew the struggle. Sa'id Khan sent Rájah Jagat Singh* against the Patháns; all the other tribes submitted, except the Lakan and two others with whom Karim Dád had taken refuge. Reduced to extremities, these saw themselves forced to deliver up Karim Dád. By royal order he was sent to the Emperor. Afterwards Jamdat-ul-Mulk Sa'd-ullah Khan married the daughter of Karim Dád, and she bore to him Lutf-ullah Khan and others.

Allahdád, son of Jalál-ud-din, was either one of the children captured in 1591—1592 and made over to Wahdat 'Ali, or else came to Hindústán after his father's death (1599—1600) owing to a quarrel with his brothers. If the second of these two suppositions is correct, the date of 1016 H. (1607) which I have given for the founding of Mau Rashidábád would seem a little too early. The first notice of Sheikh Allahdád is in Jahángír's 11th year (10th July 1615—28th June 1616), when he was made a Hazári with the title of Khan added to his own name. In the 12th year (29th June 1616—18th June 1617), he received the title of Rashid Khan with the rank of two thousand five hundred. In the 14th year (7th June 1618—27th May 1619), he rebelled in Kábul, but in the 15th year (28th May 1619—17th May 1620), his fault was forgiven and he was restored to his dignities. In the 18th year (25th April 1622—14th April 1623), he was under Mahábat Khan and did good service in the Dakhin. In the 1st year of Sháhjahán's reign (4th Feb. 1628—24th Jan. 1629), he came from his *jágirs*, was raised to be a Commander of Three Thousand with 1500 horse, and was appointed to the campaign against Jhujhár Singh Bundela, son of Bir Singh Deo. In the 2nd year (25th June 1629—14th June 1630), he accompanied the Emperor to the Dakhin and in the third year did good service. In the 4th year (5th Jan. 1632—25th Dec. 1632), he was wounded while fighting under 'Azim Khan against 'Adil Sháh and Nizám-ul-Mulk. His brother† and many personal followers were slain in the same battle. In the 5th year (26th Dec. 1632—15th Dec. 1633), Rashid Khan was appointed faujdar of part of the Akbarábád Subah. In the 6th year (16th Dec. 1633—5th Dec. 1634), he went with Sháh Shuja' to the Dakhin. He fought against the Bijipur forces in the 7th year (6th Dec. 1634—25th Nov. 1635); in the 8th year (26th Nov. 1635—15th Nov. 1636), he was attached to Khan Daurán, and in the 9th year he was no-

* By the "Tazkira-ul-Umrá" this would seem to be the son of Rája Basú of Mau in the Núrpur State in the hills. See also Proc. B. A. S., 1872, p. 157.

† Or rather, I should say, his cousin Mirzá Khan son of Núr-ud-din.

ticed for his bravery in capturing a fort. In the 10th year (28th Oct. 1636—17th Oct. 1637), he was appointed Názim of Burhánpúr and raised to be a Chahár Hazári. In the 11th year (18th Oct. 1637—7th Oct. 1638), he was made Faujdár of Sarkár Bijágarh in addition to Burhánpúr. In the 18th year (2nd Aug. 1644—22nd July 1645), he was put in charge of the Súbahs of Talingána. In the 22nd year (20th June 1648—9th June 1649) he died in that country at Nánder.* He was buried at Mau, a town which he had founded near Shamsábád.†

The governors of the Dakhin never undertook any important enterprise without consulting him. He had a large number of well-armed fighting men in his service, who were very faithful to him and looked on him as their spiritual guide. Mabábat Khán once wrote to the Emperor that Rashíd Khán, having such a powerful following, ought to be recalled from the Dakhin. He and Khán Zamán were friends and of one mind; they ought not, therefore, to be left on the frontier, for if they rebelled it would be difficult to reduce them.

Rashíd Khán so governed his Subah of Burhánpur that high-way robbery and thefts ceased, the bad characters thinking themselves lucky to escape with their lives. The 'Idgáh of Burhánpúr, till then very small, was enlarged by him. He was learned in history, secretly bigotted in religion; he wrote much poetry which has been approved by good judges. His expenditure on his harem was larger than that of any Amír of his time. In most of his habits and in his way of wielding his sword he followed the customs of Irán.

Two sons of Rashíd Khán are named in history, (1) Asadullah, (2) Ilhámullah (Rashíd Khán). Asadullah, the eldest son, on the death of his father in Sháhjáhan's 22nd year (20th June 1648—9th June 1649), was made a Hazári. In the 24th year (29th May 1651—18th May 1652), he was appointed Thánadár of Chándaur in the Dakhin Súbah, and in the 27th year (25th April 1653—14th April 1654), faujdár of Dabdauri (?) in Sarkár Saukhar (?). In the 28th year (15th April 1654—4th April 1655), he became Faujdár of Ilichpur with a *mansab* of 1500; in this year he died.

Ilhámullah, the second son, on the death of his father in Sháhjáhan's 22nd year, had also been raised in rank. On the death of Asadullah in the 28th year (15th April 1654—4th April 1655), he was appointed Thánadár of Chándaur in succession to his brother. In the 30th year (24th March 1656—13th March 1657), on the death of his uncle Hádídád Khán,

* A town on the north or left bank of the Godáveri, 145 miles N. of Haidarábád. Thornton, 682.

† In the "Ma'asir-ul-Umrá" *Shamsábád* is quite distinct, and so is *Mau*, but I cannot read the word which follows.

Ilhámullah was selected as having the best claims to succeed him and keep his force together. He was made a commander of 1500 horse. When Aurangzeb left the Dakhin for Hindústán, Ilhámullah accompanied him. After the successful campaign against Jaswant Singh was over (April 1658—Elphinstone 521), he was made a Sih Hazári, three thousand horse, and at the same time his father's title of Rashíd Khán was conferred upon him. After the first campaign against Dará Shikoh, (June 1658), he received a grant of twenty thousand rupees. When Sultán Shujá' had been defeated in January 1659, he was sent under Ma'zum Khán, commander-in-chief, and Prince Muhammad Sultán to the province of Bengal. In the 4th year (25th Jan. 1661—14th Jan. 1662), he took part in the campaign in Koch Bihár and Assam. In the 5th year (15th Jan. 1662—4th Jan. 1663), he was made faujdár of Sarkár Kámrup.* For a short time he was Subahdár of Orissa. In the 19th year (13th Aug. 1675—1st Aug. 1676), he was removed from Orissa and re-posted to the Dakhin. He acted as faujdár of Nánder for a time. In the 28th year (1684-5) he received a *khilat*.† He was alive in 1097 H. (1686) in 'Alamgir's 29th year and still jágirdár of parganah Shamshábád, as is shown by the inscription from Saráe Aghat in parganah 'Azimnagar, formerly called Tappah 'Azimnagar, a modern off-shoot from Shamshábád.‡

Hádi Dád Khán, brother of Rashíd Khán, was in the beginning of Sháhjahán's reign a commander of seven hundred. In the 11th year (18th Oct. 1637—7th Oct. 1638), he was made a Hazári. In the 22nd year (20th June 1648—9th June 1649), he was appointed to the Subah of Talingána in succession to his deceased brother Rashíd Khán, with a rise in rank. In the 24th year (29th May 1651—18th May 1652), he was given the title of Khán to be affixed to his own name with the rank of 2,500. He died in the 30th year (24th March 1656—13th March 1657). He left a number of sons, many of whom attained to *mansabs*.

Another distinguished member of the family was Shekh Núrullah, son of Kádirdád Khán, son of Muhammad Zamán, son-in-law of Ahdád, the nephew of Allahdád Rashíd Khán. In the time of Alamgir he was a commander of 400, and had charge of one of the forts in the Dakhin. During the reign of Bahádur Sháh (1707—1712) he was made a Hazári with his father's title of Kádirdád Khán. He was appointed faujdár of Jamand (?) in the Subah of Khándesh. In Farrukhsiyar's reign (1713—1719) he joined Asaf Jáh Nizám-ul-Mulk, who had been appointed Subahdár of the Dakhin. Núrullah was closely related to Asaf Jáh's mother. He fought bravely in the campaign against Sayyad Diláwar 'Ali Khán and 'Alam 'Ali

* Námrap in the MS. of *Maasir-ul-Umrá* and *Tazkira-ul-Umrá*.

† *Ma'asir-i-'Alamgiri*, p. 249.

‡ *Gaz. N. W. P. IV. 197*, and *Proc. B. A. S.*, for 1874, p. 104.

Khán, after which he was rewarded with the rank of Three Thousand, 2000 horse, and the title of Bahádur. In the attack on Mubáriz Khán he commanded the van. When Asaf Jáh had overcome all opposition he obtained for Kádirdád Khán the rank of Panj Hazári, 4000 horse. Kádirdád was assassinated by one of his own servants. As he left no issue, Asaf Jáh out of his *jágirs* granted to his relations the town of Jániganw (?) in the Subah of Aurangábád and the village of Ambárah in Subah Khándesh. These were still in possession of the family when the "Maasir-ul-Umrá" was written.

The Mau tradition alleges that Shamshábád was granted to Mirzáe Khán, while Rashíd Khán and Hádidád Khán received appointments in the Dakhin. At first the Nawáb lived in Shamshábád close to the tomb of Fír Azíz-ullah, and Mau was not founded for two years. The Nawáb's troops who took up their residence in Mau are said to have been 900 Toyah horsemen, Muhammadzai, 600, Warakzai, 500, Dilázák, 400, Ghilzai, 400, Khalíl, 400, Khaṭak, 400, Mataniya, 300, Loháni, 200, Afridí 200, Bangash, 100, in all, including other tribes, about 15,000 fighting men. Oral tradition asserts that the settlement of Mau was opposed by the Ráthor chiefs of Rámpúr* and Khemsipúr.† The Muhammadans under 'Abd-us-Samad, *alias* Mirzá Khán, Muhammadzai, Dáud Khán, Yár Khán, Burhán Khán, Toyah, and Mír Khán, Khaṭak, gained a signal victory near Khemsipur. The Rájah of Rámpúr was wounded and taken prisoner.

Nawáb Rashíd Khán's tomb, a plain but substantial domed edifice without any inscription, stands on the high land above the Burh-Ganga or old bed of the Ganges. It was repaired by a former Collector, Mr. Newnham, in 1826.‡ At its side, surrounded by a wall, is the masonry tomb of the Nawáb's wife. The tombs are surrounded by ancient *ácupalú* and *ním* trees. The attendant in charge is an old Khánzádah woman.

At Masíta Khán Khánzádah's *chaupál*, there lies a flat stone weighing some ten maunds which the popular voice, with, as my informant truly says, some exaggeration, declares was carried every day by the Nawáb to the Ganges to stand on while bathing. The site of the Nawáb's fort is styled the *koṭ*, Kachis and some Khánzádahs occupy it, two high gates still stand, and there is some brick pavement left. Part of the land is still called Muhalla Gau-khána, and a little of the so-called Bara Bazar still exists; in it is a mosque known as the Jáma' Masjid, without any inscription, which was repaired two years ago by Nizám 'Ali Khán Mataniya of Muhalla Kila', an employé of the Haidarábád State. In Khánpur, close to Shamshábád, there is a Bárahdari built by Mirzá Khán, cousin of the Nawáb, and

* In parganah Azimnagar of the Eta district. Gaz. IV. 180.

† Seventeen miles from Farrukhábád on the Mainpuri road.

‡ Káli Ráe, p. 114.

at Mau there is a Muhalla called after him "Kot Mirzá Kháni." Nawáb Hádi Dád Khán's tomb is at Nánder on the Godáveri where he died, but there is a village in pargana Shamshábád called after him Hádidádpúr. Bibi Raba'h, wife of Ilhámullah Khán, son of Rashíd Khán, built a *sarái* and well with stairs in Mauza Kuberpúr, south of Mau and east of Káimganj; the Afridis knocked the *sarái* down and used the bricks, the Báoli is still there half in ruins. The place near it is called "Sarái Bibi Raba'h" to this day. A separate village, formerly called Sayyad Firúzpur, lying between Mau and Chak Mau-Rashídábád, is known as "Katra Rahmat Khán" (market-place of R. K.) after a great-grandson of Mirzá Khán. His tomb is in Mauza 'Ataipur, east of Mau, a village formerly called Baripur but now named after a Nawáb 'Atai Khán. Subhán Khán, another chief, resettled Mauza Bhartpur just south of Káimganj, and called it after himself Subhánpúr. In the lands of Hamírpur, the next village west of Mau, is a shrine dedicated to Pír Roshán, the ancestor of the Khánzádahs. The Putwari who pointed it out to me gave the correct pronunciation, with the long á in the name "Roshán."

Mau Rashídábád remained a *jágir* of the descendants of Rashíd Khán till it was resumed by Nawáb Muzaffar Jang (1771—1796). All they now have is a few revenue-free plots, and one of them is glad to be a Head Constable on Rs. 10 a month.

Note B.

THE BAMTELAS.

There are two origins assigned for the name Bamtela. The first is, that a Thákur chief when bathing in the Ganges made as was usual a gift of his wife to the officiating Bráhmans, and then purchased her back by a large gift of money. One of the conditions imposed by the Bráhmans was, that her issue should be called Bamtela. The other story is, that this Rájah having seized a Bráhman woman and made her his concubine, her children by him were called Bamtelas.

She had three sons (1) Háthi Ráe, whose descendants lived in Bhao-pur, Jasmai, Núrpúr, Dháranagar, Sáthanpúr; (2) Nibal Deo, whose descendants held Dhaláwal, Ghárapur, Garhya; (3) Sab Sukh. This Sab Sukh had three sons (1) Bhart Sáh, whose descendants lived in Háthipur, Awájpur, Na'matpur and Baraun (8 Bíswhas); (2) Nandan Sáh, whose family held Adúli and Rashídpur; (3) Chattar Singh, whose family held Baraun (12 Bíswhas) and Bábarpur. The founders of these families are said to have lived fourteen or fifteen generations ago, but the Awájpur zamindars, when enquiry was made by the Settlement Officer, could not carry back their genealogy more than six generations.

The Bamtelas are not found outside pargana Pahára, and there they are usually divided into the Eight villages and the Fifty-two villages. In the former, which lie west of the city, they are still prominent, especially in Baraun. In nearly every one of the eight villages they still hold the zamindári. Some of them are Musalmáns. In only thirteen of the fifty-two villages can any trace of them be found, many of the villages have been absorbed into the City, and in the others their position is insignificant.

Note C.

TRADITIONS OF DALEL KHÁN IN BUNDELKHAND.

I am indebted to the kindness of Alan Cadell, Esq., C. S., Settlement Officer of Banda, for a memorandum on Dalel Khán by Pandit Mathura Parshád, Settlement Munsarim, founded on oral traditions derived from an old man Rúp Bráhmaṇ, and other inhabitants of pargana Maudha. Dalel Khán is called the son of Muhammad Khán Bangash. He was given, they say, by his father to Rájah Chattarsál who adopted him, and when he grew up endowed him with the pargana of Sonḍha (or Sihonḍa). Dalel Khán appointed his nephew, Murád Khán, to be thánadar of Sihonḍa. After a time Harde Sáh, son of Chattarsál, angered Dalel Khán by some deceit he practised, and Dalel Khán prepared for war. The Hindu Rájahs were also afraid that Dalel Khán would in time oust them, for Chattarsál had nursed him to be like a snake in their sleeves. They therefore entered into a league to destroy him, binding themselves by an oath, according to the Shastras, or Ganges water, holding a sword in one hand. Then all the Rájahs marched from Panná, Datiya, and Chirkhári, and assembled at Bán-dá. Dalel Khán was told that twenty-two Rájahs and thirty chiefs had come with intent to kill him.

Dalel Khán marched from Sihonḍa and on his way hunted in the forest of Mungas, 14 miles N. E. of Banda. Thence he went by way of Pipronda, about 7 miles west of Mungas, to Alona about six miles north-west of Pipronda, where he encamped on the banks of the river Ken.

The Bundelas advanced to Maudha, about thirteen miles west of Aloná, to Makaráṇw, Achrela, Bharela, Tandohi, Ingoṭha, Pipronda, all villages three or four miles to the north-west of Maudha. Jagat Ráj's camp was in Makaráṇw, while Kírat Ráj went to a distance, to the village of Pothya Buzarg on the Betwá, about sixteen miles north of Maudha in pargana Sumerpur, Hamírpur district. When Kírat Ráj left his camp followers behind, the village which sprung up was named Kíratpur.

One day while out hunting Dalel Khán went from Aloná to Bhulsi, two or three miles off, across the Ken, and thence to Paḍhori seven miles further on and only four miles east of Maudha. The Musalmáns of Maudha remonstrated with him on his rashness, and advised him to take shelter

in their houses or to return to Sihonda. Dalel Khán rejected their counsel, saying he would be disgraced if he retreated, that he had with him Ibráhím Khán, his brother, 'Ináyat Khán, Haidar Khán, Himmat Khán, Mu'az-ud-din Khán, Sayyad Hámid 'Ali, Bázh Khán, Mukhtár Khán, Rahím Khán, and five hundred other Patháns. Turning to his troops he harangued them, and offered to pay up and discharge all those who held their wives and children dearer than honour. A number of the Patháns then left him. With the rest he marched from Paḏhori to Maudha.

Now Himmat Khán was Dalel Khán's chief friend, and he usually rode by the Nawáb's side and conversed with him. That day as he rode along half stupified with opium, Dalel Khán as usual addressed his conversation to Himmat Khán, and playing on his name remarked that if Himmat (courage) held firm, they might after all win the day. As no reply came the Nawáb called out, "Brother, are you nodding or have you dropped behind?" Haidar Khán who was at some distance cantered up and answered, "Nawáb Sahib, he was only Himmat Khán at meal time, he left us at Paḏhori, I am the Himmat Khán for this emergency."

When they reached Korhiya Tál, near the Paráo, Dalel Khán told his men to alight and breakfast. They then mounted and drawing their swords made ready for the attack. The Bundelas meanwhile advanced from Makaráṅw, and Tandohi. The battle then commenced. The first day fifty Patháns and three hundred Bundelas were killed, the second day one hundred and fifty Patháns and four hundred Bundelas. Haidar Khán pushed his advance as far as Makaráṅw, and on his way killed five leaders and sixty men. He was killed himself in Makaráṅw. His tomb exists there near a pond, to the west of the metalled road to Hamírpur, and it is known as Haidar Shahíd. Sayyad Hámid 'Ali was killed to the east of Maudha, and his tomb is some twenty-five or thirty *rassi* to the east of the town; its name is Hámi Shahíd or Hámid Shahíd. Bázh Khán's tomb is close to Shekh Chánd Pír's dargáh, and it is called Bájá Sarmúr Shahíd. 'Ináyat Khán's tomb is to the south of the Bánda and Jalálpur road, it is called 'Inái Shahíd.

Dalel Khán was slain himself on the third day. Many others were killed with him. Ibráhím Khán, brother of Dalel Khán, fell at a place now in Maudha but then a jungle. A second Ibráhím Khán was killed near where 'Abd-ul-Karím Kanungo's house now stands. There is a Dargáh known as that of Maudi Shahíd, which no doubt is meant for Muaz-ud-din. There is also a Shahíd's tomb called vaguely Bábh Shahíd, which Mr. Kaye, late Collector, put into repair when opening out a new road. There are numerous other tombs in Maudha and its vicinity.

They relate that on the day of his death Dalel Khán drove the Bundelas before him as far as Mowaiya, about four miles south-west of Maudha.

Here one Bundela, urged by despair, struck at him and cut off his left hand; where the hand fell a tomb was built, which is also called Dalel Shahíd. It lies to the east of the metalled road to Nyaganw. The Bundelas finally drove Dalel Khán back into Maudha, where he received the cup of martyrdom. His tomb and a *masjid* with well still exist. The date assigned locally for Dalel Khán's death, *viz.*, 1792 S. (1735 A. D.) is fourteen years out, the correct date being May 1721.

The Hindi poets of his time composed many *dohá* (couplets) in praise of Dalel Khán's courage; such as are still current were collected from the lips of the before-named Rúp Bráhmaṇ, from Shákir Musalmán of Maudha, Sardár Khán of Bhamaura, about three miles to the south-west of Maudha, and others.

1st.—At the time Harde Sáh, Jagat Ráj and Mohan Singh had appointed to take the oath on Ganges water, Mohan Singh went away to Bijánagar, about two miles east of Mahoba. Then Harde Sáh refused to join; and Jagat Ráj set out alone. The poets on this occasion put the following *dohá* into Chattarsál's mouth—

मोहन साठी छै रचे हिरदे साह मये रिसाय ।

जगत बकेले सङ्गत है बह दुख सही न जाय ॥

"Mohan has decided not to join, Harde Sáh is angry, Jagat fights alone, but he cannot bear the weight of it."

2nd.—Chattarsál wrote a long letter to Dalel Khán trying to dissuade him from fighting. The inhabitants of Maudha remember these verses.

हिरदे साह से नहिँ हसी कीरत सेन कपूत ।

बेटा कहिये दखेल से बंगश वंत सपूत ॥

भारै मरहमद खान ने डारा मोरी मोद ।

तब से तुम बेटा मेरे जगत समान सुबोध ॥

मोहन ठारा है मये हिरदे रचे सुकाय ।

तुमहँ कन्यावा देखे तो मै जगतै लोऊँ समझाय ॥

"I am not deceived by Harde Sáh, Kirat Sen is a disobedient son; tell my son Dalel, of Bangash race, a good son, that brother Muhammad Khán made him over to me, since then he is my son, better than all the world; Mohan has gone off, Harde has concealed himself, let him (Dalel) give ear, and Jagat will then be talked over."

3rd.—The following answer was sent by Dalel Khán :

तुम राजा महाराज हो सब राजन मेँ हज्ज ।

बह दखेल कैसे चढे दोऊ दीन की लज्ज ॥

"You are a great king, and the most powerful of all Rájahs, now how can Dalel retreat, it would disgrace both creeds," *i. e.*, his own and that of his supposed adoptive father Chattarsál.

4th.—Some miscellaneous verses are given which have been handed down.

बहुत जमीनें तुम चरी* खाये थी चर खाँड़ ।
जो ना देखे मारिसे तौ घर घर करिसे रौड़ ॥

"You occupy great *jágirs*, you eat butter and sugar, if you do not defeat Dalel, he will make widows in many houses."

5th.—The following call for aid was sent to Harde Sáh.

माड़ी चाकी मार में बहलन करी न पेश ।
अब माड़ी डरकाय दे देवस देस चिरदेस ॥

"Our cart has stuck in the clay, make no childish excuses, help us now to shove on the cart, lend aid to your country, O Hirdesh ! (Harde Sáh)."

6th.—Harde Sáh's answer was—

सीख मोर मानी नहीं* जगत डिडारै कोन ।
तैसे अब मूँड़े परी घेर मरस मन खीन ॥

"He heeded not my counsel, Jagat acted wilfully ; now the calamity has fallen on his head, he comes back in submission to me."

7th.—Verses in praise of Dalel Khán.

मज भर जाती देखेस की बीस बिसे का ज्ञान ।
जोति में जोति समा गई पाये पद निरवान ॥
सारी सरन सकेस के मरन कियो एक ठौर ।
ज्यों पतंग दीपक जरै या बिधि धँस्यौ देखेस ॥
डिङ्गी से देखेस खाँ चख्यो खड्ग गहि बाँधि ॥
जगत राज सहराज से मार मोदहा बीच ।
भई युद्ध पट्टान की बह्यो रक्त की कीच ॥
तीन दिवस पट्टान ने करो बड़ो घमसान ।
जगत राज कम्पित भयो खोड़ भग्यो मैदान ॥
चौथे दिन दो पहर को घेर बुन्देलन खीन ।
तब देखेस भईसा गिरे खड्गन घाई कीन ॥

"Dalel's chest was a yard wide, he was a perfect soldier ; the bright soul has rejoined its essence, he has gained the rank of beatitude ; collecting together all his followers, he was killed in the field of battle. Like a lamp burns a moth, so did Dalel rush into the fight. From Delhi came Dalel Khán, with sword in hand, and fought by Maudha town with Jagat Maharáj. The fight was like that of practised wrestlers (Paṭṭhán, a play upon the word Paṭhán) ; the blood flowed and turned the earth into mire. For three days the Paṭháns undaunted fought, Jagat trembled and fled from the field. The fourth day at noon the Bundelas surrounded him (Dalel Khán) ; then fell Dalel to the earth, and many swords wounded him."

8th.—The following verses were taken down as recited by Sardár Khán of Bhamaura village, pargana Maudha :

मेलेतो सिऊङ्गमङ्ग में जिन खानके खोज कियो लड़ना ।
 मचि तीर कमानचि चक मेलेउ मुंगस के रसना ॥
 सब खंम के उपर हूद परो अस चीख भकोर धरे चिरना ।
 सब राजन के घर सोच गयो अब पेल दलेल खंखो परना ॥ १ ॥
 मुंगस होई पठान चको पपरेङ्ग में कीन मुकाम दलेला ।
 खेला भिकार जने खग जास सुमोलिन मार कियो बचमेला ॥
 पपरेङ्ग चि होङ्ग खोलन रूप्यो ककशावती के तट कीन भमेला ।
 मुलसी डस खान पंडोरी टिक्यो लड़्यो जाय बुन्देलन से बचरेला ॥ २ ॥
 कज्जल से कारे मदमतवारे उठे दतारे झल हिली ।
 मचमद का मन्दन उठा जकन्दन यारन बोली बली बली ॥
 बली बटनालें या सतनालें और बड़ी जंजाल बली ।
 बडभाति चले बरबो के चेला मर्द दलेला बाडबली ॥ ३ ॥

तोषन की तड़क कड़क किरवानन की बानन की जमक बदरी भर लावो है ।
 कदी चपनाल चडं खोर देखो एक बेर मुगल खो बुन्देलो एक लखर लगावो है ॥
 छोटे के दरियाव में दरियाव राव दलपत बली मुगलाबी तुरकानी बडकावो है ।
 लीजियो लड़ारें छाँ अइन की धारें धार मौदहा के मार बीच सेत भरवावो है ॥ ४ ॥

"They gathered in Sihunda-garh, when came word of the war ; they took up bow and arrow and repaired to the hunting-ground of Mungas. They leapt into the midst of the foe, like the *chitah** seizes and shakes a deer. All the Rájahs hesitated, when bold Dalel began to drive his way through them. The Pathán left Mungas, Dalela encamped in Paprenr. He hunted the herds of deer, and his bullet killed many a one. Leaving Paprenr, they camped in Aloná, and lingered on the banks of the Karunáwati. Passing through Bhulsi, they stopped in Pandhori, and fought with the Bundelas in Baharela. Like elephants black as lamp-black, maddened, lifting up their tusks, they drove all before them. Muhammad's son jumped exultingly, his followers shouted 'Ali, 'Ali. Eight-barrelled and seven-barrelled guns were let off, they discharged the great *Janjals*. In many ways did he thrust with his spear, did brave Dalela, the mighty. The cannon roared, the swords clashed, the rockets flashed like lightning clouds. They drew their *chapnál*, look at them once ! on every side the Mughal and the Bundelas are mingled in one wave. In the rivers of blood there are numbers of Rájahs and lords of armies. The Mugalánis and Turkánis are disheartened. Hear thus, O friend ! the fighting, the sword wounds, in the battle of Maudha, and how the field was won."

* The MS. has *chilh*, a falcon, in place of which I suggest *chitah*.

9th.—Verses in praise of Dalel Khán's horses.

बोहत चुरन चरन देखी रक्वेव पाँयें
वायु से उड़ाये यही चिनी रंग हैं ।
पाछे बाँह बी महेला मिर्चे मुकु पाव
पुङ्ग पनारी परीं यही साते संग हैं ॥
जकरे जंजीरन से पकरे सरस दुर्
सकरे दुरावत करत जोर जंग हैं ।
कछेदार मुकरे निकन्दर जुरावर जान
कंचन सो डारे है बनाये चङ्ग चङ्ग हैं ॥
भूल ताम्र बादली की पायें रंग रंग हैं ।
चरी पेरी खाह सेत बैजनी कुरंग हैं ॥
चंग से चढ़त जोर जंग से मतेम हैं ।
साहब असगर रसे सैद के तुरंग हैं ॥

“Their hoofs stamp the ground, as soon as the foot touches the stirrup ; they go like the wind, these milk-white steeds. They are fed on *ghi* and sugar, they get a handful of spices. A line is formed in their back, they are so stout ; they are fiery and strong. By strong chains two grooms lead them ; they pull at the chains and plunge and prance. They have arched necks, are white, youthful, strong and young. They are as if formed in moulds out of gold, they are of beautiful shape and form. They have cloths of gold stuff and brocade of every colour, green, yellow, black, white, purple, every colour. They leap and bound, in strength they are elephants. Sahib Asgar, these are the steeds of a great lord.”

10th.—Verses in praise of Dalel Khán obtained from Shákir Muhammad called Láhori.

नरकद खान का पूत सपूत दखेल करी भिक जोर बुन्देलों से ।
कड़ी बज्ज तंग लगी नहिं बंग सो हथर फोर करेजों से ॥
जुरे दख भीर रुकै बलभीर मुरै न मुहारे फोजों से ।
मचे किरपान दखेल पठान बयो कर फेर सुभू जों से ॥

“Muhammad Khán's son was Dalel, he scattered the Bundelas, many swords were drawn, there was no delay, from bravery their livers burst their clothes. The armies met, they bravely fought. Though pressed hard they would not give way before those hosts. Sword in hand Dalel Pathán went forward, twirling his moustache.”

11th.—The following verses are handed down as Dalel Khán's answer to the Musalmáns of Maudha when they entreated him to turn back.

मैं दखेल खां का खटो मोहिं वंजम की बाग ।
 मोह पर रजा महराज शाह का जिमकी यह किर पाग ॥ १ ॥
 हैं पठनैते बाँधे हँडे समुख जूझैने जंगी ।
 जानी के बीचा कसमसकीचा रैन उरैने ऊरदंगी ॥
 भागैने राजा सब महराजा देखि हमारी खड नंगी ।
 कहि मई दखेला रज में पैला खली खली कर बजरंगी ॥

"My name is Dalel Khán, how can I retreat, the good name of the Bangash is in my hands, on me is the hand of Muhammad Sháh, whose is this sword. This Pathán honour have I bound fast round me, I will fight face to face. Through their youthful strength the Patháns will enter the hottest of the struggle. They fear not the fray. Rajah and Maharajah will flee at the sight of my bare sword. Said brave Dalel, boldly in the battle-field, call 'Ali, Ali' as Hindus call on Hanumán."

12th.—When Dalel Khán saw his companions fall, he exclaimed :

बेटा मरे मुराद खां भाई इब्राहीम ।
 हामिद हैदर मरते खां खास खास मरे अफ्दीम ॥
 मरे इनायत खां पुन पदिल वान पडान ।
 मेरा जीवन अब बुधा यह कहि नहीं कपान ॥

"My son Murad Khán is dead and brother Ibráhím ; Hámid, Haidar, Fatte Khán, each ate opium and died. Dead, too, is Ináyat Khán, the powerful Pathán. My life is now worthless ; saying this, he grasped his sword."

13th.—When Dalel Khán rushed into the midst of the Bundelas, a poet of their side said—

बुन्देल की डखेल में दखेल भगे जात हैं ।

"Dalel flees before the waves of the Bundelas." A Bundela reproved him, and said he should say—

दखेल की डखेल में बुन्देल भगे जात हैं ।

"The Bundelas flee before the torrent of Dalel's attack."

NAWÁB KÁIM KHÁN.

On his father's death in December 1743, Káim Khán the eldest son succeeded without opposition. We have already seen that he was employed in 1721 to avenge the death of Daler Khán ; and in 1729 it was he who collected a force to relieve his father from investment by the Mahrattas at Jaitpúr. During the later years of Muhammad Khan's life he had lived at Delhi as his father's representative, and many stories, trivial in themselves and not worth repetition here, are told of the affection shown to him by the

Emperor Muhammad Sháh from whom he obtained the title of "Farzand Bahádur."

He was a very strict Sunni, said the prayers five times daily, observed Friday, and every day wrote out a verse of the Kura'n. He is said to have been a great protector of learned men. He was fond of sport of every kind, and at Delhi had the Emperor's permission to shoot in his private preserves. He was also a perfect cavalier, and in those days no one equalled him in the wielding of the lance. He had a riding horse named *Pari* (the Fairy) famed even in the Dakhin. Mounted on it he used to hunt the *Sáras* and ride them down. Many other horsemen attempted it but not one succeeded. He was also clever in other ways. He could found cannon with his own hands; and he could make very good shoes. Thirty to forty years ago shoes of a pattern invented by him called "*Káim-khání*" were much worn in *Mau* and *Káimganj*. He is said to have ruled over eighty-four *maháls*, but their names are not given.

Once a *Mahratta* in the employ of *Baji Ráo* came all the way from *Púna* to try his skill at the lance with *Káim Khán*. The *Nawáb* gave him a house at *Amethi* and entertained him for six months. In this interval he made enquiries from *Mau Patháns* in service at *Púna*, who wrote back that the man was what he professed. A day was then fixed for the tournament in despite of *Mahmúd Khán Bakhshi's* exhortations. All the *Patháns* were ordered to be ready before sunrise at *Shikárpur*, three or four miles north-west of the city, where in the bed of the *Ganges* was an open space in which the troops were usually exercised. The *Nawáb* mounted his horse *Pari*, and taking the *Mahratta* with him rode out to the plain. There they contended till full noon, but neither had been touched. Now, the *Mahratta* had a handkerchief round his arm, such as they usually tie above their other clothes. The *Nawáb* decided to try and loose this handkerchief with the point of his spear. He touched it repeatedly, but being wet with perspiration the knot had become extremely tight. After some hours, however, the *Nawáb* succeeded in untying it with his lance and carried it off on the point. The *Mahratta* was offered presents which he refused, being a noble in his own country, and he then took his departure for *Púna*.

Káim Khán's home was in the fort at *Amethi*, which he had built in his father's lifetime. It lay one mile south-east of the city within the boundary of New *Amethi*, a small town founded by the *Nawáb*, round which there was a ditch and earthen rampart with bastions which can still be traced in parts. The remains of the fort and its site were confiscated after 1857 for the rebellion of the then *Nawáb Rais*, and being put up to auction, were bought by 'Ali Muhammad, a native of *Amethi*, then *tahsildár* of the city. He has used the bricks to build a house of a semi-English fashion and he has planted the ground with fruit trees.

Káim Khán, it was, who planted the large mango grove outside the Kádíri gate, called the Lakhúla Bágh from the number of trees (Lakh = 100,000). It lies within the bounds of Khánpúr, Barhpur, Chándpúr, Museni, and Nekpúr Kalán, and still covers some 158 acres. One of his last acts before starting on the Rohilkhand campaign was to order Kamál Khán chela to have the gateways of the Tírpolya Bázár and the bastions of the Káli Burj, just beneath the fort, completed by the time he returned.

In his time on every birthday the fort used to be sumptuously adorned. In the Bíradari and Buland Mahal, canopies of Sultáni broadcloth embroidered in gold used to be set up. There were twelve hundred staves or poles of gold and silver in his store-house. These were used when required to support the broadcloth awnings. A cloth of gold curtain was hung at the Kamáni gate. No one's horse, or *pálki* or elephant was allowed to enter the fort; all, however high in rank, dismounted at the gate.

He had four wives, besides concubines; the wives were (1) Sháh Begam, his first wife, daughter of Káli Khán Bangash and niece of Kásim Khán, (2) Bibi Jowáhir, a Pathán woman, (3) Khás Mahal, a Domni from Chaloli close to Káimganj, (4) Ma'tabar Mahal, a native of Delhi. He left no issue.

No non-Moslem was allowed to touch his women's ornaments; no man was ever employed to sew their clothes; and no physician was ever permitted to feel their pulse. The four wives all lived at the Amethi fort. They had extensive *jágírs* in their own names. As they died off, this property passed part to Sarfaráz Mahal, wife of Nawáb Násir Jang (1796—1813), part to Nasrat Jang, younger son of Násir Jang, and part to the ruling Nawáb.

Whenever Sháh Begam came from Amethi to visit her mother-in-law at Farrukhábád the whole of the bázár was closed. The shopkeepers called this "Hartál" or "Hát-tára," from *hát* a shop and *tára* a lock, that is, they had to put locks on their shop doors. The conveyances were four-wheeled bullock carriages, covered with broadcloth from top to bottom. The Begam sat in the middle, and the slave girls round the edge. The cover was tied on with silken cords, and the whole was then locked up. A free woman of great age sat in front, and the driver was an old man. On the road no word was spoken. The eunuchs on horseback cleared the way. The bazar was closed for fear the Begams might overhear an unfit word.

They say Nawáb Muhammad Khán had four chosen friends (1) Mangal Khán Musenagari, so named from his being a native of the town of Musenagar on the Jamna, which was then within the Nawáb's territory, (2) Ma'zum Khán Daryábádi,* (3) Khizr Khán Panni,† (4) Shuja't Khán

* Daryábád is 43 miles E. of Lakhnau.

† Panni is the name of a tribe of Pathána.

Ghílzai, Kádírganjwálá.* On his death-bed Muhammad Khán said to his son that he must look on these four as his true friends. If there was war he should fight by the advice of Mangal Khán, who had been in every fight from his childhood; if an army had to be raised, he should do it through Shuja't Khán, a chief from Afghanistán; if revenue had to be collected, he should employ Khizr Khán Panni; if a negotiator were required at the imperial court, he should send Ma'zum Khán who had great experience there. All four of these men were killed in the battle of Dauri when Káim Khán lost his own life.

We shall see how little heed was paid to these dying injunctions. The new Nawáb appears to have placed himself entirely in the hands of Mahmúd Khán Afridí, a resident of Amethi, whom he appointed to be his Bakhshi. His brothers and relations, Yusúf Khán, Mu'azzam Khán, 'Ázam Khán, 'Sa'dat Khán, and others had several thousands of Afridís under their standard, and seem to have formed a powerful body in the state. Mahmúd Khán's kettle-drums were beaten at Kanauj, and he had complete authority over a territory paying a very large amount of revenue. He had one son, Shádi Khán, who was thrown from his horse the fourth day after his marriage; his foot caught and he was dragged and killed. In 1839 the arches of Mahmúd Khán's audience hall in Amethi were standing in a dilapidated state. They are not in existence now, and the family seems to have entirely disappeared.

Rohilkhand affairs.

Kaṭahr or Rohilkhand had gradually come into possession of 'Ali Muhammad Khán Rohela, and he paid no revenue to the imperial exchequer. Once Muhammad Sháh sent his Diwán, Harnand, with an army to recover 'Ali Muhammad Khán's country. He got as far as Bangarh† and opened his batteries. 'Ali Muhammad Khán came out and defeated him, so that the imperial army fled to Delhi.‡ Muhammad Sháh was very angry and a second time, after an interval, he prepared an army, which he put under Khwájah Aṣli Sáhib. He too opened batteries against Bangarh, to be repulsed like Harnand with the loss of a number of men on the Imperial side.

A third time Muhammad Sháh despatched all his forces under Kamr-ud-din Wazir. Now, Kamr-ud-din, who was a wary man, reflected that if he went he should meet the same fate as the others, the same army having already fled twice. He would be forced to flee or would get killed, in either

* Gaz. N. W. P. IV. 74, 161. Kádírganj is in parganah Nidhpur, Tahsil 'Ali-ganj, Eta district, 32 miles N. E. of Eta. Shuja't Khán was killed with Káim Khán at Dauri, as we shall see further on.

† In the Budáon district, 14 miles N. E. of Budáon. Misprinted *Bangash* in Elliot, VIII, 116 and 350.

‡ Life of H. R. K., pp. 16 to 18.

case his Wazárat would be gone. A defeated Wazir was always dismissed. The Wazir therefore persuaded the Emperor to march in person to the attack of Bangarh. Káim Khán joined the imperial army with his troops. This was in 1158 H. (Jan. 1745—Jan. 1746.)*

For three stages the army came to the same river and drank its waters, so the Emperor gave it the name of the "faithful friend" (Yár-i-wafadár); it flows below Auseth. At length the army reached Bangarh and proceeded to invest it. Mirzá Muḳím 'Abd-ul-Mansúr Khán Safdar Jang commanded the vanguard. One night the Paṭhāns made a night attack and surprised Safdar Jang's battery, many of his men being killed. The Rohelas returned in safety to Bangarh. Their fort was surrounded with such a thick plantation of bamboos that a cannon ball could not penetrate it. The firing went on for several days, till at last the Rohelas advised 'Ali Muhammad Khán to make peace, for to him who fights his sovereign, his wife becomes unlawful. 'Ali Muhammad Khán was to be introduced to the presence through Safdar Jang, the negotiations being conducted by his Diwán Naval Ráe.

Káim Khán's troops lay on Safdar Jang's right hand. One day 'Ali Muhammad Khán was on his way to Safdar Jang followed by twelve thousand mail-clad Paṭhāns. As he passed his eye fell on Káim Khán's tents, and he asked whose camp it was. They told him that it was Káim Khán's. Then his principal men said, "Why let the credit of the peace be gained by this Mughal and his Diwán, Naval Ráe, there is your clansman, Káim Khán, ask him to introduce you." 'Ali Muhammad Khán agreed to the proposal and went to Káim Khán, who received him most cordially. When Safdar Jang, who had been kept waiting, heard this he was much vexed, and for the rest of his life he bore a grudge to Káim Khán. Then Káim Khán tied 'Ali Muhammad Khán's hands together with his own handkerchief, and took him to the presence, where his *nazar* was accepted. The Emperor forgave him, invested him with a robe of honour, and appointed him to the Súbah of Sarhind, to the west of the Jamna. The Emperor and all the nobles then returned to Delhi.†

In the year that Muhammad Sháh died (1748) 'Ali Muhammad Khán left Sarhind and came back to Kaṭāhr. He died shortly afterwards on the 3rd Shawwal 1161 H. (14th Sept. 1748), leaving three sons. 'Abdullah Khán, Faizullah Khán and Sa'dullah Khán.‡

* Scott's *Farišta* II, 218. The Life of H. R. K. p. 20, gives 1155 H. which would be before the death of Muhammad Khán, although in the same passage Káim Khán is spoken of as the reigning Nawáb. The Persian text mentions the 27th year, which fell in 1157 and 1158 H.

† The author of the *Hadikat-ul-Akálím* who was in Naval Ráe's army, confirms the fact of 'Ali Muhammad Khan's presentation through Káim Khán.

‡ Life of H. R. K. pp. 20 to 28.

Accession of Ahmad Sháh.

Muhammad Sháh died in 1161 H. and on the 2nd Jamadi I. of that year (19th April 1748), was succeeded by his son Ahmad Sháh. Soon after, Safdar Jang was appointed wazír in place of 'Itimád-ud-daula, Kamr-ud-dín Khán, killed in the fighting against Ahmad Sháh Durrání. Now Safdar Jang, who was a deadly enemy of the Bangash family, caused a *farmán* to be sent calling Káim Khán to court. Káim Khán in his reply told the Emperor not to place reliance on Safdar Jang, who was his, Káim Khán's, hereditary enemy. The Emperor and the Wazír were enraged. The Wazír laid plans of revenge in consultation with Jáwed Khán. Accordingly a *farmán* was prepared telling Káim Khán that an important work was confided to him, that many of the Maháls of Bareli and Murádábád, recovered with his aid in the late Emperor's time, had again been usurped by Sa'dullah Khán, son of 'Ali Muhammad Khán Rohela. This territory was therefore made over to him, Káim Khán, with orders to march and occupy it. This *farmán* was sent by a relation of the Wazír's, Sher Jang, son of Sayádat Khán, the elder brother of the late Burhán-ul-Mulk Sa'dat Khán.* On the 4th Shawwal 1161 H. (16th Sept. 1748), the messenger was within one or two *kos* of Farrukhábád, and hearing of his approach Nawáb Káim Khán caused a *Bári* to be erected near the 'Idgáh. Then he proceeded in state to the spot surrounded by nobles on elephants. First the *farmán* was read, then making his obeisance, the Nawáb put on the accompanying dress of investiture. With kettle-drums beating he returned to the fort, where the chief men, money-lenders, and officials presented gifts of money, and offered their congratulations.

The principal leaders were then sent for to be consulted. Chief among them was Mahmúd Khán Afrídi, the Bakhshi, with his brothers. These all voted for immediate war, but the Nawáb seems to have been reluctant to attack his fellow Patháns. Shuja't Khán Ghilzai, who had formerly exchanged turbans with the late 'Ali Muhammad Khán Rohela, Yáqut Khán Khán Bahádur, Shamsher Khán, Mukím Khán, Islám Khán, Kamál Khán and Sardár Khán, chelas, represented to the Nawáb that the Rohelas were not his enemies, and if some one was sent across the Ganges, Sa'dullah Khán might be persuaded to attend. As a compromise Ma'zúm Khán, brother of Mahmúd Khán Bakhshi, was despatched with a small retinue to Anwalaht† with three robes of investiture for the three sons of 'Ali Muhammad Khán. His orders were to invest them with the succession, but as usual to confis-

* For the name see '*Amad-us-Sa'dat*, p. 44, line 15, where a doubt is suggested, but the despatch of some *farmán* is proved by the statements of Hisám-ud-din, an eyewitness.

† In the Bareli district, twenty-one miles S. W. of Bareli.

cate to the Emperor's use all the moveable property. If any difficulty was made, the Nawáb would march in person. It is suggested that the three sons had, before Ma'zum Khán's arrival, accepted investiture at the hand of a messenger sent direct by the Wazír. However that may be, Ma'zum Khán's mission failed, and next day he set out for Farrukhábád.

When Ma'zum Khán reported his want of success, Mahmúd Khán declared that by the return of the *khilats*, a disgrace had been inflicted, which could only be wiped out by an immediate march upon Anwalah. For many days the matter was discussed with Shuja't Khán Ghilzai and the chelas. Shuja't Khán still wished to avoid hostilities. But Mahmúd Khán, thirsting for territory and plunder, charged Shuja't Khán with acting the go-between in favour of the other side; alluding to the fact that he and 'Ali Muhammad Khán had exchanged turbans.* Stung by this insult, Shuja't Khán exclaimed, "In the name of God the Great, the Com-
"passionate, bring out the flag and I shall be the first in the fray." That day the coffers of the treasure were unsealed, the flag set up, and the artillery brought out.

Meanwhile orders had been issued offering service to noted leaders of mercenaries and to neighbouring zamindárs, such as Rájah Kusal Singh of Rúrú,† Rájah Hindu Singh of Chachendi,‡ and the Rájah of Shiú-

* The "Gulistán-i-Rahmat" tells us that after 'Ali Muhammad Khán was captured and taken to Delhi, Háfiz Rahmat Khán and his relations for six months sought a shelter with Shuja't Khán Ghilzai at Kádírganj.

† Rúrú, in parganah Bidhúna, lies some thirty miles east of the town of Etáwah (Gaz. IV. 469). It was the chief place of a taluka belonging to a family of Sengar Thákurs, whose head has always borne the title of Rájah (id. IV. 299). The story goes that when Kusal Singh reached home, his mother asked him for news of the battle-field, and out of affection began to shampoo him. When he told her that "Bhai Káim (brother Káim) was slain," she exclaimed that he was no son of hers, and could never have been in the fight. When the Rájah had bathed, he went to the cooking-place to eat his food. Then the Rání called to the slave girl *Ai cheri, kabardár rasoi men lohá na ján páwe, Rájah lohá se bahut darat hai*. The story concludes dramatically by saying the Rájah then and there committed suicide, by swallowing the diamond out of his ring. But the sober truth seems to be that he lived for many years, and died about 1786 A. D. (Gaz. IV. 299).

‡ Chachendi (or Sachendi) lies in parganah Jájmau of the Cawnpur district, fourteen miles south-west of Cawnpur, on the Kálpi road. From a manuscript kindly lent me by Mr. F. N. Wright, C. S. (through the good offices of Mr. Atkinson, C. S.) I learn that Hindú Singh, son of Har Singh Deo, son of Kharakjít Deo, was a Chándel Thákur of Bihári on the banks of the Ganges. After a quarrel with Rájah Indarjít of Shiúrájpur, he left his home, and took service with the Ráo of Sapihi in parganah Jájmau, a minor branch of the Shiúrájpur house. After a time Hindú Singh set up on his own account, raised an army, built forts at Bihnór and Chachendi, and having acquired a large territory took the title of Rájah. He was contemporary with Rájahs Mándhátá and Hindúpat of Shiúrájpur.

ájpur,* In answer to the appeal they joined Káim Khán with some twenty thousand men. Several Mahratta leaders, then Názims of Kálpi, were also entertained and brought to Farrukhábád by Ja'far Khán, chela, Názim of parganah Akbarpur.† Sheikh Farhatullah of Lakhnau, out of enmity to Sa'dat Khán and Safdar Jang, also joined with his force.

The Rohelas were much dismayed at the prospect of attack. To avert it if possible, they drew up a petition and sent it with the veil of 'Ali Muhammad Khán's widow by the hand of Sayyad Ma'gum.‡ Their petition was to this effect: "When the father of this orphan, *i. e.*, Sa'dullah Khán, died, he relied on none but God and you; if you wish to take "this territory, be it so; send here Shuja't Khan and Shamsher Khán "and Khán Bahádur, we will accompany them to your presence; in exchange "for our father's lands, we will conquer by our swords some of the country "held by Safdar Jang further to the east." When the holy man came before the Nawáb in open darbár, he threw down the wrapper of Sa'dullah Khán's mother at the Nawáb's feet. Then he held aloft a Kura'n and said, "O Nawáb! head of this clan, by this holy book, by regard for this helpless "*faqir*, and the unprotected owner of this veil, I adjure you to have mercy "on this race and slay not the defenceless, for the Book says 'Peace is a "good work both to saints and the Prophet', accept then my prayer."

Having heard the Sayyad's words, the Nawáb turned towards Mahmúd Khán Bakhshi, and to him confided the whole discussion. This man at heart wished nought but harm and dissension. He replied "You are a "Sayyad and a Pírzáda, what know you of worldly affairs, why do you in- "terfere?" Several remarks to the same effect having passed, the Sayyad saw that no favourable impression had been produced. Repeating the denunciations of God and his prophet against the proud-minded, he told all those then present that the displeasure of God and the Prophet would fall upon them. He then took his way back to the town of Anwalah, where he reported to the Rohelas and warned them to prepare at once for war. Accordingly, the Rohela leaders at the head of some twenty-five thousand men§ set up their tents in the groves near Dauri Rasúlpúr, not far from the town of Budáon, and there prayed night and day to God.

* On the Grand Trunk Road in the Cawnpur district, some twenty-one miles north west of Cawnpur. I supposed this Gangá Singh to be the same as the one mentioned with the other Rájahs afterwards, but he does not appear in Mr. Wright's MS. list. The Shiúrájpur Rájahs were Chándels, and the Ráj was founded by Shiú Ráj Deo, who is said to have migrated from Kanauj about 1336 A. D.

† Now in the Cawnpur district.

‡ The Life of H. R. K. says Sayyad Ahmad, *alias* Sháhji Miyán, was sent, and the '*Amád-us-Sa'dat*, p. 44, tells us he was Sayyad Ma'zum's father.

§ '*Amád-us-Sa'dat*, p. 45, says 40,000 foot and 7000 horse.

Káim Khán and Mahmúd Khán Bakhshi now determined to march. They had fifty thousand horse and foot paid direct by the State, besides the contingents of two hundred brothers, dependents and chiefs of the Bangash clan, all provided with elephants, and each vieing with the other in the completeness of his preparations. These served at their own expense. There were further the contingents of the Rájahs already mentioned. Nawáb Ahmad Khán, too, who on account of differences with his elder brother caused by Mahmúd Khán Bukhshi, had lived for two years at Delhi, hearing of the intended campaign, took leave of the Emperor on some pretext, and by rapid marches joined his brother's army. There were two hundred large cannon, besides swivel guns, and *chádár*, and camel-guns attached to the howdahs of the elephants, as used by Europeans,* with abundance of lead and powder.

The army marched on the 2nd Zi'l Hajj 1161,† (12th Nov. 1748), and by stages reached the Ganges at Kádirganj, about forty-three miles north-west of Farrukhábád, where it crossed by a bridge of boats into the Budáon district. Shamsher Khán and Khán Bahádúr were sent on in advance, and cutting a way quickly past Auseth and other villages, they prepared the Nawáb's encampment at the edge of the water. Daily skirmishing parties, armed with bows and arrows or muskets, were sent out from the Nawáb's army. Meanwhile the angel of death had visited the camp of Káim Khán, fear and destruction never left it, all whether old or young were depressed and agitated. The whole of the night of the 11th Zi'l Hajj (21st November 1748) they wore out on their prayer-carpets interceding for a favourable answer to their prayers.

On the other side the Rohelas, having given up all hope of escape, had begun to form an entrenchment round their camp, close to the village of

* Or "under charge of a European," *Mata'na-i-farangi*.

† There seems some conflict as to the correct year of Káim Khán's death. In the MS. of Hisám-ud-din, the 3rd year (1163-4 H.) has been written first, then crossed out, and the figure 1 substituted. His poetical *tárikhs* yield 1161, 1162, and 1163, H. The only other contemporary authority I know for 1162 H. is the *Tabárat-un-Názi-rín*, from which probably the author of the *Miftáh*, p. 497, copied that year. The *Fatehgarh Náma*, a modern work has the same year. On the other hand, the *Khizána 'Amirah*, the *Siyar ul-Muta'kharin* and the *Tárikh-i-Musaffari* all agree in naming Ahmad Sháh's first year (1161 H.) The Life of Háfiz Rahmat Khán, Wali-ullah, the *Lauh-i-Tárikh*, and Dow, all follow the above and fix the year 1161 H. The *Ma'asir-ul-Umra*, without naming the year, leads one to infer that it was 1161 H., while the *Akhbár-i-Muhabbat* in one place has 1161 H. and in another 1163 H. The year 1163 H. cannot be admitted, as then the date of Naval Ráe's death, which is not disputed, would fall before instead of after Káim Khán's death. I would decide in favour of 1161 H. as having the most evidence in its favour. The date I make out to be the 12th Zi'l Hajj, though some books give the 10th, and some the 15th of that month.

Dauri Rasúlpúr, four miles south-east of the town of Budáon. On the morning of Monday the 12th Zi'l Hajj* (22nd Nov. 1748), Káim Khán gave the order for battle. Putting on his war attire, he rode out on his elephant followed by fifteen of his brothers,† and the principal leaders and relations of Mahmúd Khán Bakhshi, namely, Ma'zúm Khán, 'Azím Khán, Yusúf Khán, Sa'dat Khán, Salábat Khán, Ahmad Khán and others, besides the friendly Rájáhs.

The chelas, Shamsher Khán, Muqím Khán, Islám Khán, Ja'far Khán, Rustam Khán, Kamál Khán, Khán Bahádur Khán, were sent on as an advanced guard. They advanced rapidly towards the grove of mango trees where were posted the Rohela leaders, Háfiz Rahmat Khán, Donde Khán, Fath Khán, and others. Shamsher Khán made his attack at the south corner of the *bágh*, and putting its defenders to the sword captured their guns. Some of the Rohelas, who had climbed the trees unperceived by the other side, suddenly poured down arrows and balls like as if the heavens had fallen to the earth. Several of the bullets struck the chain armour of Khán Bahádur Khán, and an arrow grazed Shamsher Khán upon the forehead. Many of the men were killed. After this Káim Khán and the leading men arrived with their elephants to re-inforce the first attack. A discharge of arrows and musketry was delivered, and then their men drawing their swords put many of the Rohelas to death.

At the very moment of the contest at the south corner, Ma'zúm Khán, brother of Mahmúd Khán, Manavvar Khán, and Námdár Khán, brother of 'Izzat Khán, advanced against Sa'dullah Khán, who was in position at the north corner of the same *bágh*. They fought their way close up to Sa'dullah Khán. Manavvar Khán had in his hand an iron mace (*gurz*). He had raised it to fell Sa'dullah Khán, when Ma'zúm Khán cried out "Brother, take him alive," and at the same time drove his own elephant forward, intending to throw his cloth (*chadar*), made into a noose, over Sa'dullah Khán's head, thus dragging him from the one elephant on to the other. Sa'dullah Khán crouched down in his *howdah*, and the noose missed him. Just at this moment Mullá Sardár Khán Bakhshi with some horsemen and matchlockmen rushed up from his battery, which was to the south of the *bágh*, and the whole of the Bangash leaders and their elephants came under fire. Ma'zúm Khán, 'Azim Khán, Salábat Khán, Jalál Khán and other Afrídi leaders were killed.

* Wali-ullah and the *Siyar-ul-Muta'kharin* give the date, 15th Zi'l Hajj.

† The brothers with their number in the list of Muhammad Khán's sons (p. 350-352) were Ahmad Khán, No. 2, 'Abd-un-nabi Khán, No. 6, Husain Khán, No. 7, Fakhr-uddin Khán, No. 8, Murtazza Khán, No. 4, Imám Khán, No. 11, Bahádur Khán, No. 15, Hádidád Khán, No. 14, Isma'il Khán, No. 9, Karim-dád Khán, No. 10, Khúda-bandah Khán, No. 12, Shádi Khán, No. 16, Mansúr 'Ali Khán, No. 13, Manavvar Khán, No. 18.

On seeing this, Mahmúd Khán Bakhshi drove his elephant forward, and was soon afterwards shot dead. Then Nawáb Káim Khán ordered his brother, 'Abd-un-nabi Khán, to advance in support. 'Abd-un-nabi Khán and Sháh Asad 'Ali* were seated on one elephant. The former was killed and the latter wounded above the elbow. One after another, the sons of Muhammad Khán advanced by Káim Khán's order and were shot down. Those killed were 'Abd-un-nabi Khán, Hádídád Khán, Bahádur Khán, Muríd Khán; while those wounded were Imám Khán, Fakhr-ud-din Khán and Murtazza Khán. Those sons of an Amir in bravery and courage did not belie their race; but "against the foreordained what avails, failure and success are "alike in the hand of God."

Three accounts† attribute the Nawáb's death to an ambuscade, an incident omitted by others.‡ Some such accident is almost required to account for the immense slaughter of leaders. It is related thus. Mangal Khán Musenagari had counselled Káim Khán not to advance too far, before the fate of the day was decided. His advice was disregarded. Now between the two armies lay a hollow, long, wide and deep, like the ditch of a fort, called in the Hindi tongue *Bihar*§. Close to the edge of this hollow were high *bájra* crops. The Rohelas had three thousand men on one side with muskets ready loaded, and five thousand on the other hidden in the high crop along the edge of the ravine. Káim Khán in his pride charged at the enemy, the Rohelas gave way and threw themselves into the hollow. Káim Khán with sixteen thousand veterans and fifty-one chiefs on elephants descended into the hollow in pursuit of the fugitives. As these were on foot, they could scramble up the high bank on the other side, and thus made good their escape. Nawáb Káim Khán had only got half way across the low land, when suddenly the Rohelas in ambush rushed up to the edge, and eight thousand matchlocks were fired down in one volley.

At the critical moment of the attack, Rájáhs Hindú Singh and Gangá Singh and Kusal Singh, who were on Káim Khán's right, turned for flight. Their bad example was imitated by the Mahrattas from Kálpi. Seeing this, the other Rohelas, Háfiz Rahmat Khán, Donde Khán, Fath Khán and others, came out of the *bágh*, joined Mullá Sardár Khán, and with their united forces turned against Nawáb Káim Khán. Those of his companions, who were still unhurt, gathered round his elephant. The enemy maintained their fire, but attempted no hand-to-hand encounter. When most of those round the Nawáb had been slain, the Rohelas surrounded his elephant and pointed their matchlocks upwards to shoot at him. Shekh Farhatullah of Lakhnau, who was on the right hand, brought his elephant closer

* Died 7th Safar 1184 H. (2nd June 1770).

† The *Siyar-ul-Muta'kharin*, the *'Amád-us-Sa'dat*, and the *Lauh-i-Tárikh*.

‡ Life of H. R. K. and Sháh Hisám-ud-din.

§ Uneven land, full of ravines.

up; but at that moment he was carried off by a musket shot. Shortly afterwards, at about one and a half hours after sunrise, a ball struck Káim Khán on the forehead and he fell dead. Diláwar Khán Narkasse,* who was seated in the Nawáb's *howdah*, received him in his arms and wiped off the blood. An attempt was made to carry off the body, but the Rohelas pursued and coming up with the elephants cut off the head of the Nawáb. Others who lost their lives in this battle were Mangal Khán Musenagari, Ma'zum Khán Daryábádi, Khizr Khán Panni, Khán Bahádur Khán Khwája Saráo, Rustam Khán and Kamál Khán, chelas, and Roshan Imám, son of Miyan Fazl Imám. Khán Bahádur Khán was buried at 'Aliganj, the popular tradition asserting that his elephant carried his body there from the field of battle.

During the battle Shuja't Khán Ghilzai, who had come there from a sense of duty though against his own inclination, had stood alone on one side. When he was told that Káim Khán was dead, he wept and exclaimed, "Shall such a leader be slain, and I go back alive to appear before the Bibi "Sáhiba; to do so would be more than I can bear." He went towards the leaders of the enemy's army, intending to give himself up. When he came near to Háfiz Rahmat Khán, the men about him said, "May your mouth be filled with dust." But Háfiz Rahmat Khán, who had got down from his elephant, said, "Send for a *pálki*, meanwhile will you get down?" Diwán Mán Ráo, who was standing close by, said in Pushtu,† "Wise men do not kill the scorpion and leave his brood." During this conversation one of the Rohelas rode up with his matchlock across his shoulder. He fired it at Shuja't Khán and shot him through the breast.

After the death of the Nawáb the rest of the leaders, some wounded and some scatheless, took to flight. They were Nawáb Ahmad Khán, who was wounded, his son Mahmúd Khán, Husain Khán, Fakhr-ud-din Khán, Ismá'il Khán, Imám Khán, Karim-dád Khán, brothers of Káim Khán, and the chelas, Shamsheer Khán, Mukim Khán, Islám Khán. They fled though no one cut off their retreat nor was any man pursuing them. After being much scattered and after much molestation from the zamindárs of that part, they re-assembled near the banks of the Ganges. At first a bridge of boats was thrown across, but Nawáb Ahmad Khán and the others caused it to be broken up. Then driving their elephants into the river they forded it, while the horsemen and infantry, stripping to their waist-cloths, threw themselves into the water and swam across. Out of shame they all slunk into the city and sought their homes by bye-ways. When it was noised abroad that Nawáb Káim Khán was slain and his army defeated, there

* A *bagh* just outside the Kádiri gate of Farrukhábád is called after this man Rání Bágh Narkasse.

† An unlikely language for a Hindu to know, but thus in Hisám-ud-din's MS.

arose weeping and wailing in every lane and in every house. Not a household was left untouched by this sorrowful event, and the fate of thousands was never traced. Many had been wounded and taken prisoners, many were found dead on the field. Of these latter, those that were recognized were carried away and interred in the graveyards.

The body of the slain Nawáb, clad in rich garments and followed by holy men and mourners, was despatched from the battle-field to Farrukhábád.* The next day but one, three headless corpses were laid at the feet of the Bibí Sáhíba. Káim Khán was identified by a lily mark on his foot. It is a coloured mark on the sole of the foot, and he who has it is destined to bear rule. The Bibí Sáhíba after her lamentations were over, took the body of her son, and wrapping it in the clothes he wore when slain, carried it out to the Haiyát Bágh for burial at the side of his venerable father.

The following chronograms give the year of Káim Khán's death :

I.—*Káim-i-bihisht shud* (1162).

"He stood firm in paradise."

II.—*Kanjashf ba-báz kard shikár* (1163).

"The sparrow pursues the hawk."

III.—*Pák be-bad shahíd Káim Khán* (1162).

After the victory the Rohelas felt as if they had been raised from the dead, and they offered up a thousand prayers and thanks to God. Then with drums beating a triumphal march, they returned to their capital of Anwalah; and parties were sent out to overrun and occupy the Farrukhábád parganahs on the north or left bank of the Ganges. These consisted at that time of ten mahals: 1, Budáon, 2, Auseth, 3, Jalálábád, 4, Mihrábád, 5, Ausáyá, 6, Aujhání, 7, Khákatmau-Dahlya, and three others not named (two of them probably 8, Amritpur-Islámganj and 9, Paramnagar, and the third perhaps 10, Sahaswán). The Rohelas advanced as far as Khákatmau, opposite Farrakhábád, where they first met with resistance. A chela who was 'Ámil of the place showed a strong front and kept up a vigorous musketry fire at the enemy, many of whom were killed. He would not abandon his parganah, and the Rohelas thinking there was no need to entangle themselves in brambles, left the place and marched back. All the rest of the Trans-Ganges country was thus lost permanently to the Farrukhábád Nawábs. Only Amritpur, Khákatmau and Paramnagar were preserved through the courage of this nameless chela.†

(To be continued.)

* The *Gulistán-i-Rahmat* describes in some detail the finding of the body; but the *Hadikat-ul-Akálím* says it was never found. Reports spread of Káim Jang's being still alive, and Shekh Allahyár once saw a man who obtained notoriety for several years by giving himself out to be Káim Jang.

† The battle of Dauri will be found in "*Siyar-ul-Muta'kharin*, III. 874, "*'Amdá-us Sa'dat*," p. 44, line 16 to p. 45, line 17, "*Khizána Amira*" (Lucknow edition) p. 80 and "*Life of H. R. K.*" pp. 29—32. I follow Hísám ud-din almost entirely.

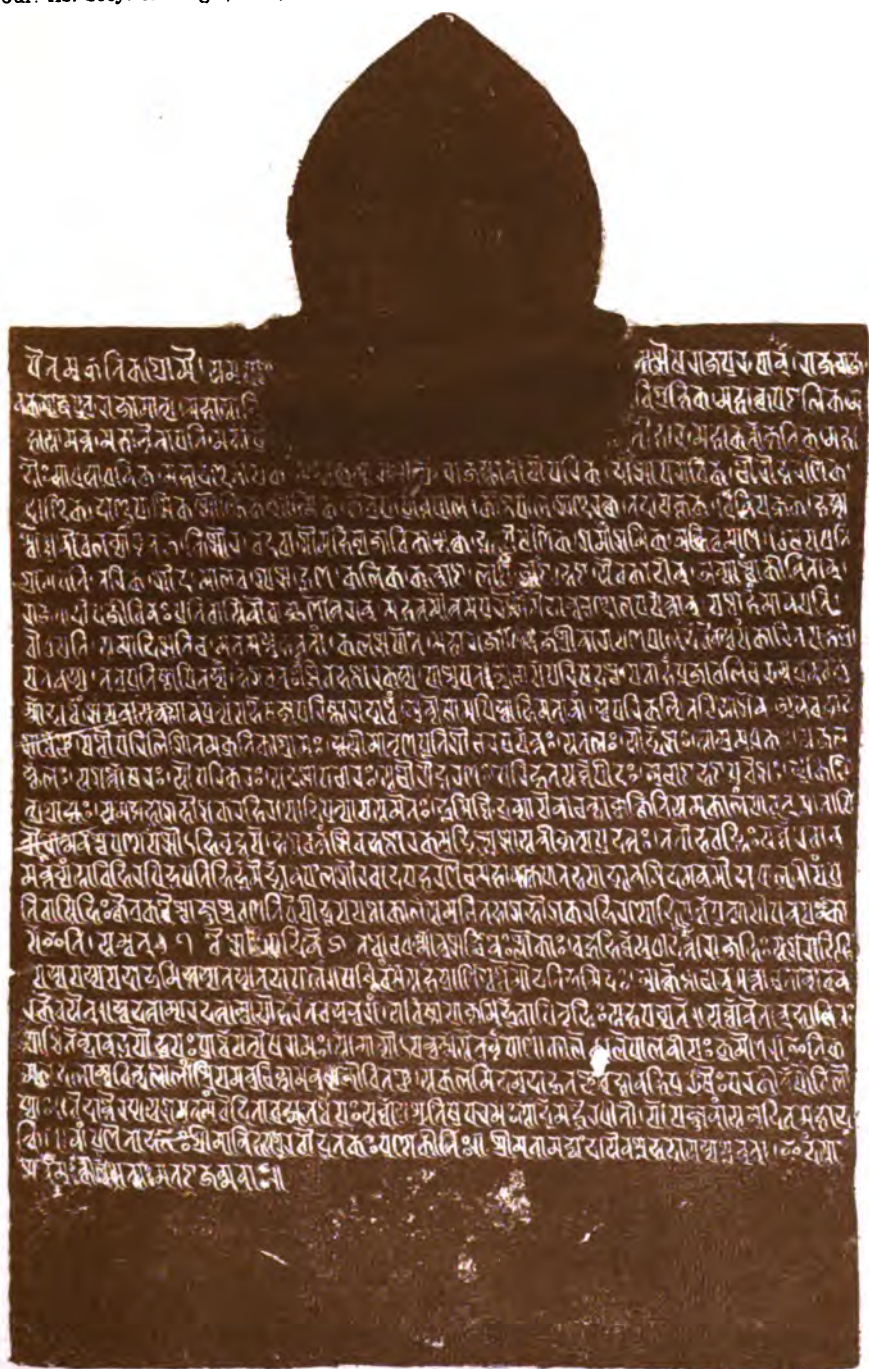
On the Pāla and the Sena Rājas of Bengal.—By RĀJENDRALĀLA
MITRA, LL. D., C. I. E.

The Society has lately received from Mr. Smith of Bhāgalpur a copper-plate of one of the Pāla Kings of Bengal. It measures 15·5' × 12·7' inches, and has a scalloped top 6 inches high and 6·5 long at the base. The centre of the top is enclosed in a circle, 8 inches in diameter, and around it is a band of lotus petals. The legend in the centre is a wheel mounted on a stand, and supported by a deer *rampant* on each side—a well-known Buddhist symbol. Below this is the name of Nārāyaṇa-pāla Deva, and below that a sprig formed of a flower and two leaves. The front of the plate is surrounded by a border line, but on the reverse this does not occur. The inscription in front extends to 29 lines, of which the first four are broken in the middle by the base of the scalloped top, which covers the plate to the depth of 2 inches. On the reverse there are 25 lines of inscription. The plate is thick, and in a fair state of preservation. The letters are of the Kutila type. See plates XXII and XXIII.

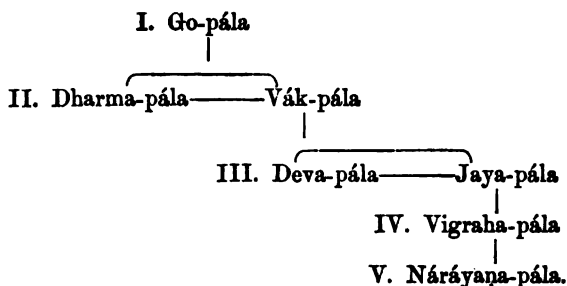
The record opens with a stanza in praise of Go-pāla, who was a devout Buddhist, and a follower of Sugata. His son and immediate successor was Dharma-pāla. The latter had a brother named Vāk-pāla, who lived under his sway. On his death Deva-pāla the eldest son of his brother succeeded him. Vāk-pāla had a second son named Jaya-pāla, who is said to have brought Orissa and Allahabad under his brother's government. On the death of Deva-pāla, Vighraha-pāla, the son of Jaya-pāla, came to the throne. Vighraha-pāla married Lajjā of the Haihaya race, and had by her a son, named Nārāyaṇa-pāla. The last, as the reigning sovereign, is spoken of in the highest terms of praise; but the only noticeable work of his described in the record is a bridge of boats across the Ganges near Mungher. In the 17th year of his reign, on the 9th of Vaiśākha, when this prince was encamped near Mudgagiri, modern Mungher, he presented the village of Mukatika for the support of Śiva Bhaṭṭāraka and his followers. The donee appears to have been a Hindu, and the gift was made with a view to assist him in offering *charu* and *bali* to a divinity named Sahasrākṣa, and also for the dispensation of medicines to the sick, and food and shelter to the indigent. The record was composed by Bhaṭṭa Gurava, the minister who erected the Budāl pillar, and engraved by Meghadāsa, son of Subhadāsa. The genealogical table deducible from this record may be thus arranged :



Photoincographed at the Surveyor General's Office Calcutta.



Photomicrographed at the Surveyor General's Office, Calcutta.



The genealogy here given is apparently not in accord with what has been hitherto known to be the family tree of the Pálas, and, in order to elucidate the history of the Pálas, it is necessary to advert to certain records, already published, relating to some of the sovereigns of the family. General Cunningham, in his *Archæological Survey Reports*, Vol. III, has already noticed them at length; but some of the facts contained in them require to be further discussed.

The first inscription brought to the notice of the Asiatic Society of Bengal was a copper-plate grant of one of the Pála Rájás of Bengal. It had been discovered among some ruins at Mungher, and translated by Sir Charles Wilkins, in 1781, three years before the foundation of the Society. The translation was published in the first volume of the '*Asiatic Researches*,' (pp. 122, *et seq.*) but without any facsimile or transcript of the original. The original is lost, and so many doubtful points in it cannot now be solved. It opens with the name of Go-pála, a pious king, who acted according to what is written in the Śástra, and obliged the different sects to conform to their proper tenets. His religion is not mentioned; but he was evidently a Buddhist, for the document begins with a comparison between him and Sugata Buddha, the allusion to the Śástra being intended either to imply his tolerant character, or to the scriptures of the Buddhists. His son, Dharma-pála, seems to have died while engaged in a marauding excursion towards the Himálaya. The circumstance is explained by his panegyrist in the following manner: "He went to extirpate the wicked and plant the good, and happily his salvation was effected at the same time, for his servants visited Kedár, and drank milk according to the law, and they offered up their vows where the Ganges joins the ocean, and at Gokarna and other places." It is scarcely likely that the king had ever exercised any power in those places. His accomplished wife, Kanna Deví, bore him a son, Prince Deva-pála, who succeeded his father in the kingdom "even as Bodhisattva succeeded Sugata." His name occurs as "the lord of the land" in a Buddhist inscription found in a mound near Pesserawa in Behar.*

* *Journal, As. Soc. XVII, p. 493.*

His conquests, according to the chronicler, extended from the source of the Ganges to Adam's bridge, including the Vindhya and Kámboja countries; but probably it did not in reality stretch much beyond the Vindhyan range. The conquest of Kámboja evidently had no firmer basis than the imagination of the poet. When encamped at Mudgagiri, modern Mungher, this prince, on the 21st day of Márgasírsa, (November—December,) in the 33rd year of his reign, bestowed the town of Misika in Krimila, a department of Śrínagara, modern Patna, to one Bodha Bhikshurata Miśra. The imprecations against the resumption of the grant are given in the usual Purāṇic style.

Soon after, a second monument of that dynasty was found at Budál in Dinájpur, and also translated by Sir Charles Wilkins. It was a record inscribed on a stone pillar, by order of a minister of one of the Pála Rájás. As in the last case so in this the translation was published in the 'Researches,' (Vol. I, pp. 131 *et seq.*) without any text. But a plate was added, giving a front and a side view of the pillar and a specimen of the character of the inscription. Sir William Jones was not satisfied with either of the translations, and appended to them some explanatory notes. A revised transcript and translation of the last, however, has since been published by Bábu Pratápachandra Ghosha,* and all doubts regarding the original have now been removed. This inscription was put up by a minister of Náráyana-pála who recorded the merits of his ancestors, who seem to have been all officers of the Pála family. Trusting to the wisdom of one of them, the chronicler states, "The king of Gauḍa for a long time enjoyed the country of the eradicated race of Utkala (Orissa), of the Hunnas of humbled pride, of the kings of Dráviḍa and Gurjara, whose glory was reduced, and the universal sea-girt throne." Bábu Pratápachandra Ghosha has thus summarised the historical results of this record.

I. Sándilya.

II. Viradeva.

III. Páñchála.

IV. Garga, married Ichchhá.

V. Sri Darbhapáni, minister of Deva-pála, married Sárkara.

VI. Someśvara Miśra, married Taralá.

VII. Kedárnátha Miśra, married Badhvá of Devagrāma, Sura-pála, contemporary.

VIII. Gurava Miśra, minister of Náráyana-pála.

The third record was found at Sárnáth, near Banáras. It was inscribed on a stone, and a facsimile transcript and a translation of it were published in the fifth volume of the 'Asiatic Researches' It contained the

* Ante XLIII, pt. I. pp. 356f.

names of four members of the dynasty under notice, *viz.*, Mahi-pála, Sthira-pála, Vasanta-pála, and Kumára-pála; but the record was throughout so corrupt, and the reading so manifestly incorrect, that no reliance whatever could be placed on it for purposes of historical deduction. The stone was not forthcoming early in this century; but General Cunningham pointed out to Major Kittoe, the probability that the original stone would be found somewhere about the tank of Diwán Jagat Siñha in the city of Benáres, which was constructed entirely of stones removed from Sárnáth. After a short search the latter found it. "The inscription was recorded", says General Cunningham, "on the base of a squatted figure of Buddha, which was broken at the waist. Kittoe sent me a tracing of his sketch of the statue, and a copy of the inscription, with transcript in modern Nágari. This differs very much from Wilford's version, as will be seen in the following translation."

"Adoration to Buddha. Having worshipped the lotus foot of Sri Dhama-rási, sprung from the lake of Varánasi, and having for its moss the hairs of prostrate kings, the fortunate Mahi-pála, King of Gauda, caused to be built in Kási hundreds of monuments, such as Íśána and Chitraghanta.

"The fortunate Sthira-pála and his younger brother, the fortunate Vasanta-pála, have renewed religion completely in all its parts, and have raised a tower (*śaila*) with an inner chamber (*garbha-kuṭi*), and eight large niches. Samvat 1083, the 11th day of Pausha."*

The learned antiquarian does not mention where the stone now is, nor the name of the person who translated the record. He has also not given a facsimile or transcript of it. Under the circumstances no critical enquiry can be made as to the correctness of the reading and the translation. This is much to be regretted, as the document is the only one which has a really intelligible and useful date in it.

It is to be regretted also that the next record to which I have to refer, a copper-plate inscription found at Kmgáchhi in Dinájpur, appears also to be defective. Colebrooke, who translated it, published only an abstract. According to Colebrooke's abstract the first prince mentioned in it is Loka-pála, and after him, Dharma-pála. The next name has not been deciphered, but the following one is Jaya-pála, succeeded by Deva-pála; two or three subsequent names are yet undeciphered; then follow Rája-pála,—Pála Deva, and Vighraha-pála, and subsequently Mahi-pála Deva, Naya-pála and Vighraha-pála. The date appears to be of the last king's reign, the 9th day of Chaitra (March—April), Samvat 12.

The next record, in order of discovery, was found by Captain Marshall in 1864, but not published in any form. Mr. Broadley noticed it in 1872. It was found inscribed on the jamb of the entrance to the Nálándá temple. It occurs at the foot of an ornamental scroll, and measures 8 inches by 5.

* Arch. Survey Report III, p. 121.

Its language is Sanskrit, and its extent 12 lines, of which the second breaks off in the middle after the word Samvat, and the third begins so as to leave some space at the beginning. This was done probably with a view to leave room enough for the date in figures or words; but they were never put in. The jamb being made of hard basalt, and having been placed on the door side, deep behind a broad portico or veranda, suffered not at all from the influence of the weather when *in situ*; and, since the destruction of the temple, having remained buried under a large mass of rubbish, between 20 and 30 feet deep, looks as fresh as when it was first turned out of the sculptor's atillier.

The subject of the record is a donation to the temple, but the nature of the gift is not apparent. The words used for the purpose are *deya dharmoyam* "this is a religious gift," and the pronoun therefore may apply to the stone on which it occurs, or to the gate of which the stone forms a part, or to the portico, or to the entire temple. The words, however, are generally used as a formula for expressing a gift, and the gift might be other than the substance on which they occur. Looking to the nature of the temple,—a brick structure cemented with clay and plastered with stucco, which had undergone several repairs, the plastering in many places being not in keeping with the mouldings formed of bricks, and the door-ways, apart from the stone-facings, being perfect and bearing marks of plastering under the stones—there is no doubt now that the temple existed from long before the time of the Pāla Kings of Bengal, and the formula therefore does not apply to it. General Cunningham takes the temple to date from the 1st century B. C. The donor was one Bālāditya, a native of Kauśāmbi in the Doab of the Ganges, the son of Gurudatta, and grandson of Haradatta. He was a Buddhist by religion, a follower of the Mahāyāna school, and a devout worshipper. He belonged to a clan of oil-sellers named Tailāḍhaka. He had no pretension to royalty, but in religion, whether Hindu or Buddhist, it was not necessary for a devout person to have high social position, to make a religious gift in an ancient public temple. He claims no merit to himself for the gift, but desires that the fruit of it may promote "the advancement of the highest (religious) knowledge among the mass of mankind."*

When I first read the inscription from a facsimile, I was disposed to take the date of this inscription to be the Samvat year 913 = A. D. 856. I made out the figures from three symbolical words: the first—*agni*, "fire," being equal to 3, the second *rāgha*, "power," = to 1; and the third *dvāra*, 'door' = 9. This would be equal to 319; but the practice invariably followed in explaining symbolical figures is to transpose them according to the well-known rule, *aṅkasya vāmā gatī*, "figures run to the left," and I had no

* *Ante* XLI, pt. I, p. 310.

hesitation, therefore, in adopting it, particularly as the character of the writing, the Kuṭiḷa, which had a range of between four or five centuries from the 8th to the 12th, fully justified my course. The symbolical meanings of the first and the last words are well known and undoubted. The second, however, was not in common use, at least I had never found it used in that sense. Its first letter rá was unmistakable, but the second could be a compound of d and ya, which would produce ádya or one, the r being taken for the visarga after agni. This would lead to the same result. Inasmuch however as the first word cannot take the nominative case-mark in the midst of a compound term, I preferred the reading adopted. Soon after communicating my translation to Mr. Broadley I paid a visit to Behar, and, on examining the stone, I found the second letter to be clearly a dh, and the word *rádha* being equivalent to the Hindu month Vaisákha (April—May), I came to the conclusion that the first two words meant the 3rd of Vaisákha, the subsequent word *dvára tate* meaning “spread on the door”, i. e., the gift whatever it was given at the gate.* This explanation left the figures of the Samvat unprovided, but the blank space after the word Samvat I supposed was the locale of the figures or symbolical words which were never engraved. Professor Ráma Kṛishṇa Gopál Bhandárkar of Bombay, to whom a facsimile had been communicated by Mr. Broadley, took the two upright strokes after the word Samvat to be equal to 11.† I could not, however, subscribe to this opinion. In the Kuṭiḷa character the figure for 1 is not an upright stroke, and there was no reason to suppose that a departure had been made in this case. The blank spaces after the word at the end of the first line and at the beginning of the second line would under the supposition also be unaccountable. In Sanskrit inscriptions and MSS. it is not usual to break the matter into paragraphs, and the blank spaces cannot but imply a deliberate act intended for something to be put in afterwards, the matter not being ready at hand at the time of the incision.

Mr. Broadley found an inscription of Go-pála at the same place, two of Madana-pála and Vighraha-pála respectively at Behár; three of Mahi-pála, and one each of Ráma-pála and Deva-pála at Ghosrawáñ and Titraváñ. The Ghosrawáñ inscription was first noticed by Major Kittoe.‡

With a view to complete the summary of the references to the history of the Pála Kings, it is necessary further to refer to the list of the Pálas given in the *Ain-i-Akbari* (vol. I, p. 418) and in Táránáth's work. They have been entirely superseded by the inscriptions, but they afford curious illustrations of the changes which had been effected by the traditions current in the time of Abul Fazl. Abul Fazl's list has been reproduced in Pere Tieffenthaler's work.

The Genealogical lists derived from these several sources may be thus tabulated :

* *Ante*, XLI, pt. I., p. 310.

† *Loc. cit.*

‡ *Ante* XLV.

The Pāla Kings of Bengal and Behar.

No.	Bhāgalpur Plate.	Mungber Plate.	Buddh Pillar.	Dināpur Plate.	Sārnāth stone.	Small inscriptions, each a single name.	Ain i Akbari.	Tārānāth in Bas-relief.
1	Go-pāla.	Go-pāla.	....	Loka-pāla.	....	Go-pāla (?)	Bhu-pāla.	Go-pāla.
2	Dharma-pāla.	Dharma-pāla.	....	Dharma-pāla.	....	....	Dhir-pāla.	Deva-pāla.
3	Vāk-pāla.	....	....	(Illegible).	....	....	....	Raso-pāla.
4	Deva-pāla.	Deva-pāla.	Deva-pāla.	Jaya-pāla.	....	Deva-pāla (*)	Deva-pāla.	Dharma-pāla.
5	Jaya-pāla.	....	Sura-pāla.	Deva-pāla.	....	....	Bhupati-pāla.	Masurakabita.
6	Vigraha-pāla.	....	....	(Illegible.)	....	....	Dhanapat-pāla.	Vana-pāla.
7	Nārāyana-pāla.	....	Nārāyana-pāla.	Nārāyana-pāla.	....	Nārāyana-pāla (*)	Bijen-pāla.	Mahi-pāla.
8	....	....	....	Rāja-pāla.	....	....	Jaya-pāla.	Maha-pāla.
9	....	....	....	— pāla.	....	....	Rāja-pāla.	Shanu-pāla.
10	....	....	....	Vigraha-pāla I.	....	Vigraha-pāla (*)	Bhoj-pāla.	Srestha-pāla.
11	....	....	....	Mahi-pāla.	Mahi-pāla.	....	Jagat-pāla.	Chanaka-pāla.
12	....	....	....	Naya-pāla.	Sthira-pāla.	Naya-pāla (*)	....	Beira-pāla.
13	....	....	....	Vigraha-pāla II.	Vasanta-pāla.	....	....	Neia-pāla.
14	....	....	....	....	....	Mahendra-pāla (*)	....	Amara-pāla.
15	....	....	....	....	....	Rāma-pāla (*)	....	Hasti-pāla.
16	....	....	....	....	....	Madana-pāla (*)	....	Kohānti-pāla.
17	....	....	....	....	....	Govinda-pāla (*)	....	Rāma-pāla.
18	....	....	....	....	....	....	....	Yakha-pāla.

REMARKS.

(1) Nālandā, No. 1 of C.

(*) Behar, No. 7 of C.

(2) Ghosrawān, No. 5 of C.

(*) Gayā, No. 12 of C.

(3) Gayā, No. 6 of C.

(*) Rāma Gayā, No. 13 of C.

(4) Behar, No. 15 of C.

(5) Behar, No. 16 of C.

(6) Gayā, No. 18 of C.

It is obvious that the several authorities quoted above all refer to the same dynasty, and the question therefore arises—how to reconcile their discrepancies? The list of the *Ain-i-Akbari* and that of *Táránáth*, may be left out of consideration, as they are founded upon tradition, and, in dealing with long lists of names, tradition is always open to mistakes. But the case is different with patents issued during the lifetime of the grantors, and which, from that circumstance, are naturally expected to be accurate in so important a matter as the names of the immediate ancestors of royal personages. Discrepancies in such cases cannot easily be explained away, and in the present instance the difficulty has been greatly enhanced by some of the patents available being imperfect and mutilated. It is the farthest from my wish to cast any reflection on the translators whose works I have to review; I have high respect for their ability and profound scholarship; but where the originals they had to work upon were smudgy, obliterated, and partially illegible, their translations cannot be implicitly relied upon.

The first discrepancy I have to notice is in the name of the founder of the dynasty. According to three inscriptions, of which two are in a perfect state of preservation, and tradition as recorded by *Táránáth*, it is *Go-pála*; but in a fourth, and that the most defective, it is *Loka-pála*; and the *Ain-i-Akbari* changes it to *Bhu-pála*. Assuming *Colebrooke's* reading of the *Dinájpur* plate to be in this part correct, I can account for the difference by attributing it to the exigency of metre. The genealogy is given in verse, and the necessity for a word of two syllables, I think, induced the conveyancer to change the first part of the name from the monosyllable *go* to the dissyllable *loka*, the meaning remaining unchanged—*go* = 'earth' and *loka* = 'region' or earth. The *bhu* of the *Ain-i-Akbari* has the same signification. It might appear repulsive to an Englishman that Mr. Black should change into Mr. Melanos, to suit the convenience of a poet, but in the middle ages it was not uncommon in Europe to translate English names into Latin even in prose epitaphs, and in the present day poets not unfrequently change the quantity of proper names to suit their rhyme. In Sanskrit the practice of using synonyms either for the sake of metre, or for that of rhetoric, was at one time not unknown. If this explanation be not acceptable, it might be supposed that the person referred to had two *aliases*; and the writer of the *Dinájpur* plate used one name, that of the *Ain i Akbari* another. It is worthy of note that the writer of the *Bhágálpur* monument was only five generations removed from the founder of the dynasty, whereas that of the *Dinájpur* plate was separated from him by over twice that interval, and greater faith must be reposed on him who was the nearest to the founder.

The second name is the same in all the three inscriptions in which it occurs, and calls for no remark. The third, however, is not so. In the *Bhágálpur* record, which is the most perfect, it is *Vák-pála*, but in the

Mungher plate Deva-pála. In the Dinájpur plate it is illegible. It appears, however, from the first record that Vák-pála was the younger brother of Dharma-pála, and served as a lieutenant to his brother. The second record in giving the succession of the reigning sovereign, did not, therefore, feel called upon to name him. In the third record I think the illegible name which Colebrooke could not read and the next name Jaya-pála are not names of reigning sovereigns, but epithets of Dharma-pála, which have been mistaken for proper names. The word pála 'a protector' is just one of those which a Hindu poet would most likely play upon in a variety of ways, and try to educe as many alliterations out of it as possible, and as Colebrooke says, "so great a part of the inscription is obliterated, (portions of every line being illegible) that it is difficult to discover the purport of the inscription,"* such a mistake was not at all unlikely to happen. If the illegible name be assumed to be Deva-pála, the son of Vák-pála and successor of Dharma-pála, we could not make Jaya-pála his son, for the Bhágampur plate makes Jaya-pála the son of Vák-pála and brother of Deva-pála, and Vighraha-pála his son. The Budál pillar names Sura-pála only, leaving out Vighraha-pála, but as the object of the pillar was not to give a genealogical table of the kings of the Pála dynasty, but to record the names of the ancestors of one Gurava, the minister of Náráyana-pála, naming the kings incidentally as patrons of those ancestors, the omission is not remarkable. The Dinájpur plate names only one person between Deva-pála and Náráyana-pála, and his name is illegible. We may reasonably assume it to have been Vighraha-pála.

The sixth name in the Bhágampur plate has not its counterpart in any other record. Its absence from the Mungher plate is accounted for by the fact of the latter not extending beyond Deva-pála; and from the Budál plate, on the supposition of the owner of it not having been a patron of the family to whose honour it was dedicated. It should have been present in the Dinájpur plate, but as the entirety of that document is not forthcoming, it is impossible to say precisely whether there is only one name illegible in it after Deva-pála, or two.

Leaving out of consideration the lists of the *Ain i Akbari* and of *Táránáth*, which are unreliable and quite irreconcilable, we have only the Dinájpur plate to supply the names of the descendants of Náráyana-pála down to Mahi-pála, and it gives us four names *viz.*, Rája-pála, —pála, Vighraha-pála and Mahi-pála, which we must accept as correct pending the discovery of some more authentic document. I accept the Naya-pála and Vighraha-pála II. on the same authority, with Sthira-pála and Vasanta-pála as their *aliases* on the testimony of the Benares stone.

In addition to the above there are four other names in inscriptions, each giving a single name; but as there is nothing reliable to show the order

* *As. Researches*, IX, p. 434.

of their succession, and further as they do not fall within the scope of this paper, which I wish to confine to the sovereigns of Bengal only, I shall take no note of them. Within the limits which I prescribe for myself, the materials available, as aforesaid, afford a list of eleven reigning sovereigns instead of thirteen, as given by General Cunningham, his Nos. 3 and 4 being inadmissible in the face of the Bhágalpur plate.

The only intelligible date available for these eleven reigns is afforded by the Benares stone, and that is Samvat 1088 = 1026 A. D. The document when first read was utterly untrustworthy, and in drawing up my monograph of the Sena Rájás I took no notice of it. Although no facsimile has since been published, as General Cunningham obtained a copy of the record from so able an antiquarian as the late Major Kittoe, and himself read the date as given above, I am bound to accept it; for I am of opinion that no one in India in the present day has so thorough a knowledge of Indian lapidary writing as that profound scholar, and he is not at all likely to make a mistake in reading a mediæval figure. The date may be taken to be about the middle of Mahi-pála's reign, and as Mahi-pála was the most renowned of the Pálas of Bengal, the only one whose name is still remembered by the people, and whose monument, the Mahi-pála Dighi of Dinájpur, is still in existence, his reign may be fairly assumed to have been of more than average length. If I say it lasted from 1015 to 1040 A. D., I fancy it would not be by any means thought to be improbable.

With this starting-point gained it is necessary to calculate backwards the times of his eight predecessors. For this purpose General Cunningham adopts an average of 25 years. He says, "Assigning 25 years to a generation, and working backwards from Mahi-pála, the accession of Go-pála, the founder of the dynasty, will fall in the latter half of the 8th century; or still earlier, if we allow 30 years to each generation. By either reckoning, the rise of the Pála dynasty of Magadha is fixed to the 8th century A. D., at which time great changes would appear to have taken place amongst most of the ruling families of Northern India."*

The General assigns no reason for adopting this average, and I cannot help thinking that it is too high. It is certainly not in accord with data available from Indian history. Twenty reigns of the Mughals, from 1494 to 1806, give an average of 15 years and 7 months. Twenty-one reigns in Káshmir, from 1326 to 1588, give 12 years and 6 months. Forty reigns of the Delhi Patháns yield an average of 9 years and 9 days. Twenty-four reigns of the Bengal Patháns, from 1200 to 1850, produce a little over 6 years. Similarly twenty reigns in Burmah, from 1541 to 1781, offer an average of 12 years. Doubtless these averages are of periods and reigns

* Arch. Surv. Report, III, p. 135.

some of which were much troubled; but in a place like Ceylon, whose insular position protected it to a great extent from outside or foreign attacks, twenty reigns from 1410 to 1798 yield an average of 19 years and nearly 5 months. In England, in the same way, from Edward IV to William IV, or 1461 to 1837, twenty-one reigns yield an average of no more than 17 years, 10 months and 25 days. There was nothing in the physical or political condition of the Pálas in Bengal which could give them a greater immunity from the vicissitudes of changes incident to royalty than in the places named. James Prinsep, after a careful survey of the history of Indian dynasties, took 16 to 18 years to be the average, and nothing has since been found to show that his calculations were wrong. Doubtless in taking averages a great deal depends upon the period and the number of reigns taken into account. A George III, or an Akbar, with two or three average reigns, would often upset all calculations; but with 20 to 40 reigns, the risk of error from occasionally protracted reigns is reduced to a minimum. The Pálas in Bengal did not enjoy any great immunity from outside attacks. They had very powerful rivals in the kings of Orissa on one side, in those of Behar and Kanauj on another, and those of Assam and Tipperah and Eastern Bengal on a third, and it is well known how outside rivalry fomented domestic discord; and, taking these facts into consideration, I cannot assign them a higher average. Eighteen years, in my opinion, would be (if anything) high, but in consideration of the number of reigns being small—only eight before Mahi-pála—and to provide for the possibility of there having been an Akbar or two among them, I shall take it at 20, which would be the highest possible admission. At this rate the result will be as follows:

I. Go-pála,	855	VII. — pála,	975
II. Dharma-pála,	875	VIII. Vighraha-pála, II, ..	995
III. Deva-pála,	895	IX. Mahi-pála, 1015 to 1040	
IV. Vighraha-pála, I	915	X. Naya-pála,	1060
V. Náráyaṇa-pála,	935	XI. Vighraha-pála, III, 1080	
VI. Rája-pála,	955		

The inscriptions noticed above clearly show that all the Pálas were staunch Buddhists; but several of them were tolerant enough to employ Hindus as their principal officers of state; and, though they no doubt encouraged the diffusion of their own religion, they not only did not oppress their people for their religion, but even allowed their Hindu ministers to apply to them, in official and estate documents, praise which could be grateful only to Hindu ears. They went further, and sometimes gave lands for religious purposes which cannot be strictly called Buddhist.

The last question in connexion with the Pálas is the locale or extent of their dominion. Táránáth calls them all kings of Bengal; so does Abul

Fazl in the *Ain-i-Akbari*. The Mungher plate does not name the kingdom of the three Pálas, but it was executed when the camp of Deva-pála was pitched at Mudgagiri, i. e., Mungher. The Bhágampur plate was also executed at Mungher, and in it Náráyana-pála is called the "lord of Anga," or king of Bhágampur and its neighbourhood, including Mungher. The Budál pillar occurs in the Dinájpur district, and that would show that in the time of Náráyana-pála his minister Gurava had administrative power on the north of the Padmá. The Dinájpur plate not having been fully deciphered, we know not where it was executed, and, though found at Ámgáchi, it is possible that the grant may refer to some place at a great distance from it. There can be no doubt, however, that one of the latest kings named in it, Mahi-pála, exercised full sovereignty in the province to the north of the Padmá. That vast sheet of water in Dinájpur which still bears his name, the Mahi-pála dighi, is a proof positive on this point. We have also the evidence of the Sárnáth stone which calls him lord of Gauda, though the stone cannot be accepted as a proof of Mahi-pála's reign having extended as far as Benares. In a sacred place of pilgrimage any person could go and dedicate a temple or an image, without in any way acquiring political power in the locality.

Mr. Westmacott, in his "Traces of Buddhism in Dinájpur," supplies several other proofs in support of the sovereignty of the Pálas on the north of the Padmá. He says, "In all south-eastern Dinájpur, and the neighbouring parts of Bagurá, remains of Buddhism, and of the Buddhist Pála kings are numerous. It was in this neighbourhood that in the seventh century the Chinese pilgrim Hiouen-Tsang found the Buddhist court of Paundra-varohana which I identify with Vardhana Kúti, the residence of a very ancient family, close to Govindaganj, on the Karatoyá. Mr. Fergusson, in his paper on Hiouen-Tsang, quotes from an account of Paundradeśa in the fourth volume of the 'Oriental Quarterly Magazine,' that Vardhana Kúti, governed by a Yavana, or Musalmán, was one of the chief towns of Nirvritti, comprising Dinájpur, Rangpur and Koch Behar, and consequently the eastern half of Hiouen-Tsang's kingdom of Paundra Vardhana."* Elsewhere he says: "Dharma-pála, whose fort still bears his name, more than seventy miles north of Vardhana Kúti, and other Pála kings, were ruling east of the Karatoyá long after Bengal had been subdued by the Senas, before whom indeed the Pálas probably retreated by degrees to the north-east, and were supplanted without any great catastrophe."† Again, "close to Jogi-ghopá are extensive brick remains, said to have been the palace of Devá-pála, whether the Deva-pála of the Mungher plate or not I will not say, but certainly of the Ámgáchi plate. Bhimlá Deví, daughter of Deva-pála, is said by the ignorant *pujáris* to be represented by one

* *Ante*, XLIV, p. 188.† *Loc. cit.*

of the Jogi-ghopá carvings. A mile to the south-west, at Amári, are more brick remains which Dr. Buchanan heard called the palace of Mahi-pála. Across the *bíl*, two miles north-east, at Chondirá, are remains, which he was told were those of Chandra-pála's palace; there are more bricks at Kaṭak and Dhorál, and indeed in all the country round are innumerable brick ruins. Seven miles north of the great *stúpa* is the celebrated Budál pillar, set up by a minister of Náráyaṇa-pála, and bearing an inscription, in which Deva-pála and Sura-pála are mentioned as having preceded Náráyaṇa-pála. A dozen miles north of that again was found the Ám-gáchi plate, containing a grant of Vígraha-pála, and enumerating his ancestors, Sura-pála his father, Mahi-pála, Dharma-pála, and others."* Several local names, such as Mahiganj, Mahinagar, Mahipur, Mahi-santosh, Nayanagar, &c., also bear remains of the names of former Pála kings.

The evidence thus is on the whole sufficient to show that the Pálas exercised sovereignty on the west of the Bhágirathí, certainly as far as the boundary of Behar and probably further, taking the whole of the ancient kingdom of Magadha. On the north it included Tirhut, Máldá, Rájsháhi, Dinájpur, Rangpur and Bagurá, which constituted the ancient kingdom of Paundravardhana. The bulk of the delta seems, however, not to have belonged to them. To show this and to prove the time when they were finally expelled from Bengal proper, we must turn to the history of the Sena Rájás of Bengal.

In my paper on the Sena Rájás,† I have already put together the names of all the Sena Rájás that have been brought to light by authentic records, and nothing has since been discovered to disturb their genealogical table as published by me. Mr. Westmacott, in 1875,‡ published some remarks on my paper, but his criticisms did not apply to the order of succession. But several important facts have since been brought prominently to notice, and they necessitate slight alterations in the dates assigned by me to the several princes of that dynasty.

The most important of these facts is the era of Lakshmaṇa Sena. The credit of first discovering it is due to Colebrooke. In the Preface to his translation of the 'Digest of Hindu Laws,' he remarked: "Haláyudha, the spiritual adviser of Lakshmaṇa Sena, (a renowned monarch who gave his name to an era of which six hundred and ninety-two years are expired), is the author of Nyáya-sarvaśva, &c." But no notice was afterwards taken of this era, and Prinsep in his 'Useful Tables' entirely passed it over. Subsequently an opportunity offered him when he noticed an inscription from Buddha Gayá,§ in which the era of Lakshmaṇa is distinctly mentioned,

* *Loc. cit.* † *Ante*, Vol. XXXIV. ‡ *Ante*, XLIV, pp. 1 f. § *Ante*, V, p. 669.

but he overlooked it. In that record the date is given in these words :

श्रीमन्नक्षत्रसेनदेवपादानामनीतराज्ये सं० ७४ वैशाखवदि १२ गुरौ ।

"On Thursday, the 12th of the wane, in the month of Vaisákha, Sam. or year 74 after the expiration of the reign of the auspicious Lakshmaṇa Sena Deva." Calculated with the datum given by Colebrooke, it would have at once settled the date of Lakshmaṇa Sena ; but this was not done. In 1873, I found a MS. of the 'Sadukti-karṇāmrta,' dated Śaka 1500=1578 A. D., in the colophon of which the work is described to have been compiled in the Śaka year 1127=1205 A. D., which corresponded with some date of Lakshmaṇa Sena which I could not make out. The date is given in words, the meaning of which could not be reconciled ; the words are श्रीमन्नक्षत्रसेनचित्तिपथ्य रसेकविंशे । The author was the son of a confidential friend and a general under Lakshmaṇa Sena.*

Shortly after the publication of my remarks on this MS., in an anonymous article on the life of Váchaspati Mísra, published in a Bengali magazine called *Baṅga Darśana*, Bábu Rájakrishṇa Mukarji announced that the era of Lakshmaṇa Sena was still current in Tirhut, and its date in 1874 was 767, its distinctive mark being ल० स०, the initial letters of "Lakshmaṇa Sena Samvat." The Bábu also noticed an inscription of Śiva Siñha, a local chieftain, which bore date the 280th of Lakshmaṇa Sena's era. A brief notice of this article appeared in the 'Indian Antiquary' for 1875. The Bábu, likewise, used this date in an elementary history of Bengal, published in that year. Thus the credit of utilizing the date and bringing it to bear on the history of Bengal is entirely due to him.

In 1875 Mr. Westmacott brought to notice a copper-plate grant found in the bed of a tank called Tarpandighi, seven miles S. S. E. of Debkot in Dinájpur,† which bore the 7th year of Lakshmaṇa Sena's reign ; but no attempt was then made to trace the initial date of the era.

In 1877, Paṇḍit Rámanátha Tarkaratna, who is employed by the Asiatic Society of Bengal to collect information regarding Sanskrit MSS. in private libraries, while travelling in Tirhut, collected some information on the subject, and communicated it to me. He also purchased there two old Sanskrit MSS. for the Government of India, which were dated in the era in question. One of them *Anumánálaka-ṭiká*, a gloss by Madhusúdana Thakkura on the *Anumána Khaṇḍa* of Gaṅgeśa, is dated ल० स० ४५९ वैशाखवदि १४ । "the 14th of the waxing moon in the month of Chaitra L. S. 479." The other, *Pratyakshálaka-darpana*, a gloss by Maheśa Thakkura, on the *Pratyaksha Khaṇḍa* of Gaṅgeśa, has वेदादिनिगमैर्युक्ते भूपलक्षणसम्यक्ते । "In the year of the Vedas (4) the eight, and the Nigamas (4) according to the king Lakshmaṇa."

* Notices of Sanskrit MSS. III, pp. 134—148-9. † *Asia*, XLIV, p. 13.

Apparently disjointed as these facts are, they are of great importance in the elucidation of the date of the Sena Rájás. To put them together, we have first in the Tarpandighi plate the 7th year of Lakshmana's reign. In the Buddha Gayá inscription we have the 74th year of his era. Then we have in the Sadukti-karpámrta MS. some date which corresponded with the Saka 1127=1205 A. D. Then comes the Siva Siñha inscription, dated in the 280th year of that king's era. Then we have two MSS., one dated in the 459th year, and the other in the 484th of that era. And lastly we have the fact that the era is still current, and in the present year reckons 771. That the era is not a newly devised one, is abundantly evident from the fact of its having been in regular currency all along, and its present figure, therefore, gives us a very correct clue to its initial date. The pañdits of Tirhut reckon the era to be a luni-solar one, commencing from the 1st of the luni-solar month of Mágha, and it must have therefore commenced in January 1106 A. D., or within three years of the date which I conjecturally assigned to Lakshmana Sena in my paper on the Sena Rájás.* This settles the date of Lakshmana Sena on infinitely more reliable data than what we have for any other Hindu sovereign of the pre-Muhammadan era.

Beginning with 1106, Lakshmana had a very prosperous reign of many years, for his minister Haláyudha informs us, in the preface to his Bráhmaṇa Sarvasva, that he commenced service when very young as a court pañdit, and was successively raised by the king to higher ranks, till he was made a minister when he had become old.† A period of 30 years would scarcely be too much for this, and Lakshmana's reign may very fairly be assumed to have extended to the close of the fourth decade of the 12th century. His immediate successors, Mádhava Sena and Keśava Sena did not take up each two or three years, and the rest of the century was taken up by Lákshmaṇeya *alias* Áśoka Sena, the Lakshmaniyá of Muhammadan writers.

The name Áśoka has puzzled many antiquarians. With the vivid recollection of the name as that of the great patron of Buddhism, they have found it difficult to reconcile with it the idea of a Hindu bearing the name. But the word simply means "griefless," and there is nothing to prevent such a name being given to a Hindu. On the contrary, Hindu mothers and guardians often use terms indicative of immunity from pain, grief and the like; and, in the case of a posthumous child which lost its mother immediately after its birth, a term implying that it would never have cause to mourn the loss of its parents, would by no means be inappropriate.

With the close of Áśoka Sena's reign, the sovereignty of the Hindus in the delta passed to the Muhammadans; but the exact time when this

* *Ante*, Vol. XXXIV, p. 139.

† *Ante*, p. 138.

happened, yet remains undetermined. When writing my paper on the Sena Rájás I accepted as a fact the opinion then prevalent, that this happened in 1203 A. D. This, however, has since been questioned. The late Mr. Blochmann, whose researches into the dark points in the Muhammadan history of India were unrivalled, came to the conclusion, that the transfer must have taken place four years earlier, or between 1198 and 1199, whereas Major Raverty, in his translation of Albiruni, removed it 590 H. = 1194 A. D.,* while Mr. Thomas placed it at 599 H. = 1204 A. D. Even the latest of these dates would seem to be a little too early, if we should take the statement of the author of the *Sadukti-karṇāmṛita*, who completed his work in 1205, when he described himself as a district Commissioner in the service of Lákshmaṇeya, to mean that his master was then reigning at Nuddea. He could not have held that position in 1205, if the kingdom had passed away to the Muhammadans five years before. But it was possible for him to describe his official rank in his work, even after he had lost it, or to refer to the king when he reigned at Sonárgáoñ after his retirement from Nuddea; for it is now well-known that he and his descendants lived at the latter place for several years after his overthrow by Bukhtiar Khiliji.† Dr. Wise believes that there must have been a Ballála Sena reigning in Vikrámpur or Sonárgáoñ after Lakshmaníyá, and Susena and Sura Sena, whose names I once took to be *aliases* of Lakshmaníyá, were probably those of other successors. On this point, however, there is no reliable information at hand; and as the question of date is related to Muhammadan history, I shall leave it unnoticed for the present.

Turning to the ancestors of Lakshmaṇa Sena, the first name I have to deal with is that of Ballála. The close of his reign of course took place in the year of the commencement of the reign of his son. But when it commenced, remains uncertain. The Ain i Akbari makes it begin at 1066, which would give it a duration of 41 years. The authority of Abul Fazl, however, is not great in such matters; and, as I have rejected it in the case of the Pálas, I cannot consistently accept it in the present instance. This much, however, may be unhesitatingly stated, that Ballála's reign was a long and prosperous one. He is the best known to this day of all the Sena Rájás, and the system of nobility or Kulinism which he organized, exists to this day in full force. None but a powerful sovereign, reigning with considerable eclát for a prolonged period, could have carried out the system so thoroughly as he did; and a reign of 41 years is after all not so improbable as absolutely to necessitate its rejection.

Of the predecessors of Ballála we have lapidary proofs of four names, Vijaya Sena, Hemanta Sena, Sámanta Sena, and Vira Sena, extending, at an average of 18 years, to 994 A. D., or at 20 years, which I have reluctantly

* *Ante* XLIV, p. 277.

† *Ante* XLIII, p. 83.

assigned to the Pālas, to 986 A. D. The last name I took to be an *alias* of Adisura, Vira and Sura being synonymous, and a notable instance of the use of synonyms occurs in the name of the founder of the Pāla dynasty, who is at option called Go-pāla, Bhú-pāla or Loka-pāla. In a Bengali book, entitled *Sambandha-nirṇaya*, published two years ago, Paṇḍit Lālamohana Vidyānidhi states that he had been informed of a tradition current in the Varendra country which makes one Bhúsura the son of Adisura, and adds that Bhúsura dying without male issue, his daughter's son Aśoka Sena succeeded him, who was followed by Sura Sena, and the latter by Vira Sena. On asking the paṇḍit for his authority for this tradition, he told me that he had got it from a Kulajña at Murshidabad, but that he had heard it nowhere else. On so slender an authority, I cannot induce myself to accept it as a matter worthy of historical enquiry. The two names Aśoka and Sura are later names, which the Kulajña put at the beginning, evidently not knowing where else to place them. Leaving these names aside, it will be seen that the Pāla and the Sena dynasties fall for some time within the same period. The one beginning in the 9th decade and the other in the 6th decade of the 10th century. It is obvious, therefore, that they could not have reigned over the whole of Bengal at the same time, nor could the Senas have followed the Pālas, as the modern Anglo-Indian historians usually make them; but there can be no doubt that both dynasties did reign in Bengal at the same time. The difficulty, however, may be easily overcome.

It has been already shown that the Pālas occupied western and northern Bengal. There is nothing, however, to show that they had extended their sway to the eastern districts. Whereas tradition assigns to the Senas the whole of the delta and the districts to the east of it. The chief seat of their power was at Vikrampur near Dháká, where the ruins of Ballála's palace are still shown to travellers. Dr. Wise, in his notice of Vikrampur, says—"A remarkable evidence of this is afforded by the names of the 56 villages assigned to the descendants of the Five Bráhmans whom Adisura brought from Kanauj. All those villages were situated within the delta, and none out of it." This is of course an indirect evidence, but it is not the less significant. It may be added that none of those who dwelt out of the delta, in the northern districts, were included in the scheme of Ballála's nobility. The Varendras have since organized a system of their own, but it is not in accord with that which prevails as the system of Ballála.

The religion of the Senas was Hinduism, either of the Saiva or of the Vaishṇava sect. In the Rājsháhí stone and the Bákerganj copper-plate, Śiva is the divinity invoked. In the Tarpandighi plate preference is given to Viṣṇu or Nárāyaṇa, and the epithet Parama-máheśvara occurs in all the three. The well-known fact of the founder of the family obtaining five Bráhmans to perform Vedic rites which, owing to the dominance of the

Buddhists, had become obsolete in Bengal, clearly shows that they were Hindus, and there is nothing to give rise to suspicion in the matter.

In no part of the world could two such near neighbours as the Pálas and the Senas, professing such antagonistic faiths as Buddhism and Hinduism, co-exist without coming into hostile contact; and in Bengal there is no reason to suppose that the case was otherwise than what has been elsewhere invariably the result of such neighbourhood. Even chiefs professing the same faith have not been noted for their amity to rivals, and we may therefore take it for granted that the Pálas and the Senas frequently fell out with each other, until one expelled the other from the country. When this expulsion took place, it is at present impossible to determine with absolute precision. But materials are not wanting to show that this happened about the middle of the 11th century. It has been already shown that to the time of Mahi-pála, northern Bengal belonged to the Pálas, and the Tarpandighi plate of Lakshmaṇa Sena, and the prevalence of that sovereign's era in Tirhut to this day, incontestably prove that northern Bengal had come into the possession of the Senas before the commencement of the 12th century. Ballála, the father of Lakshmaṇa, had the title of "King of Gauḍa," and that takes us to the 7th decade of the 11th century; and in the Bhágulpur stone there is a verse which says "Vijaya overthrew the king of Gauḍa." The verse is somewhat involved in its construction, but the most obvious meaning appears to be the following:

"'Thou hast no hero to conquer,' said the bards. On hearing it, through a misconception (the words being susceptible of the meaning 'thou hast conquered no hero') the king overthrew the king of Gauḍa, subjugated the hero of Kamrúpa and quickly conquered him of Kalinga."* At an average reign of 18 years Vijaya must have commenced his reign in 1048. At an average of 20 years the date would be 1046, the overthrow therefore must have taken place between 1046 and 1055. As it is not likely that Mahi-pála's reign had extended beyond 1040, the event must have taken place when Naya-pála, his successor, was the sovereign of Gauḍa. The Pálas then receded from northern Bengal, and reigned for some time in the western districts of the kingdom, making Magadha or Mungher their capital.

The result of these remarks may be thus tabulated:

PÁLA KINGS.		SENA KINGS.	
<i>In Western & Northern Bengal.</i>		<i>In Eastern & Deltaic Bengal.</i>	
I.—Go-pála,	855	I.—Vira Sena,	986
II.—Dharma-pála,	875	II.—Sámanta Sena,	1006
III.—Deva-pála,	895	III.—Hemanta Sena, ...	1026

* *Ante*, XXXIV, p. 144.

		<i>In the whole of Bengal.</i>	
IV.—Vigraha-pála, I, ...	915	IV.—Vijaya <i>alias</i> Sukha Sena,	1046
V.—Náráyana-pála, ...	935	V.—Ballála Sena,	1066
VII.—Rája-pála,	955	VI.—Lakshmaṇa Sena, ...	1106
VII.— — pála,	975	VII.—Mádhava Sena,	1136
VIII.—Vigraha-pála II, ...	995	VIII.—Keśava Sena,	1188
		IX.—Lákshmaṇeya <i>alias</i> Áśoka Sena,	1142 ?
		<i>In Vikrampur.</i>	
IX.—Mahi-pála,	1015	Ballála Sena,	
	to 1040	Su Sena,	
X.—Naya-pála,	1040	Sura Sena, &c.,	
	to ?		

In Behar.

XI.—Vigraha-pála III and others.

In my first paper on the subject I started the opinion that the Senas were Kshatriyas of the lunar race, and not Vaidyas as they are supposed to have been by the people of the present day. The opinion was founded upon the positive declaration of two inscriptions, and that of a work, the *Dána-sāgara*, written by Ballála himself. It has now the support of another inscription. In the Tarpandighi plate there occurs a verse which Mr. Westmacott thus renders into English: "The kings of the race of Aushadhinátha (moon) neutralize the sharp fever-poison of their enemies by the lustre of the nails of their feet, as with the juice of the creepers nurtured (as plants with water) by the lustre of the diadems of numbers of kings, prostrate in homage."* Exception, however, has been taken to the deduction by some of my countrymen, mostly Vaidyas of the Sena family, who claim themselves to be of the royal race, and several Bengali books have been written to prove my error. My critics all labour under the mistake that I wanted to make the Sena kings members of the Káyastha caste, in order to glorify that caste, and enjoy the advantage of a ray of that glory, being myself a Káyastha; but as I have nowhere said anything of the kind, I cannot but leave this part of their criticisms unnoticed. They have created their own Frankenstein, and I leave them to lay it in the best way they can. The chief arguments which they urge to controvert the statements of the inscriptions are—1st, that the statements may be due to poetical license, or a desire to eulogize the kings in an exaggerated style; 2nd, that the reference to the moon, who is, according to the Purānic mythology, the lord of medicines, may be due to a desire to make an indirect allusion to the profession of the Vaidya caste; 3rd, that others than Kshatriyas could call themselves descendants of the lunar race; 4th, that Ádisura, who is described as a descendant

* *Ante*, XLIV, pt. I, p. 13.

of the lunar race cannot be the same with Vira Sena, for none would employ a synonym to indicate a proper name, and so the epithet of the former cannot apply to the latter.

Little need be said in reply to these arguments. The first is a mere assumption, and not by any means a permissible one. Exaggerations and hyperboles are the chief aliments on which poets most do thrive ; but there is not a single authentic instance in which poetical license has been, in India, permitted to invade the domains of caste. The Puráṇas have made mortals conquer the immortal gods, endowed them with the most transcendental attributes, called them gods, but never changed their castes ; nor have they ever attempted to disown cross sinisters from the escutcheon of the greatest of their kings. And what is true of these Puráṇas, is equally so of later writings, when tenacity for caste distinctions had grown much stronger. It is observable also, that no spirit of poetical hyperbole can be predicated of Ballála Sena describing his own caste in a law treatise by himself.

The second argument is ingenious ; but it is, like the first, a mere assumption. I have no hesitation in saying, that in the whole range of Sanskrit literature, there is not an instance in which the caste of the Vaidyas has been indirectly referred to by allusion to the moon. At best it is an attempt to give preëminence to a possible metaphorical interpretation, in preference to an obvious literal meaning.

The third is incorrect. None but a Kshetriya could call himself a member of the lunar or the solar race, and members of those races, when degraded or outcasted, could not retain their claim to the honor of membership under them. The instances cited of Yayáti's children becoming members of different castes refer to the earliest stage of Hindu society, when caste distinctions probably did not exist, or at any rate were not very strictly observed ; and even then there is no proof to show that those who were degraded were in the habit of calling themselves members of the solar race. Within the last two thousand years, a Bráhmaṇ or a Kshetriya, condemned to be a Chaṇḍála, has never been permitted to call himself a Bráhmaṇ or a Kshetriya Chaṇḍála. The idea is simply ridiculous.

The fourth argument has already been answered by the parallel case of Go-pála appearing also under the names of Bhu-pála and Loka-pála. Were it otherwise, the argument would not advance in the least, for my antagonists admit that Vira Sena was the great-grandson of Adisura by the daughter's side, and if so, the son-in-law of Bhúsura and his son-in-law could not be of other than the caste of Adisura. On the whole the arguments are based on a series of suppositions, in order to support a modern tradition against the avowed declarations of authentic contemporary records. I deny the accuracy of the tradition, and

my antagonists beg the question at issue, by saying that the tradition must be correct, and the records must be made to conform to it by a number of suppositions. Truth can never be elicited by such a course of reasoning, and it would be a mere waste of time to enter into a disputation with persons who attach greater importance to traditions than to authentic contemporary records.

Transcript of a Copper-plate from Bhágalpur.

- १ । खसि । मैत्रीकाव्यरत्नप्रमुटितद्वयः
- २ । प्रेयसी' सम्मानः सम्यक्सम्भारविद्यापरिदमस्तज-
- ३ । कलासितः ज्ञानपङ्कः । जिला यः काम
- ४ । कारिप्रभवमभिसवं शास्त्री' वा * * * यज्ञोऽभि न श्रीमान् लोकनाथो जय-
- ५ । ति दशवस्रोऽन्यथ गोपालदेवः ॥ सञ्जीवनीकैतव्यस(श)मकरोद् बोद्धं चमा
स्वामरं पञ्चदेवभादु-
- ६ । पश्चितवतामेकानथो भूयता । मर्यादापरिपालनैकनिरतः शैव्यालयोऽस्माद्भूदु
दुम्बाकोविधिविज्ञास-
- ७ । चरिमचिमा श्रीधर्मपाशो वपः ॥ जिलेन्द्राजप्रभतीवरातीनुपार्जिता येन मन्त्रो-
दयनीः । दत्ता पुनः
- ८ । सा वसिष्ठार्थपित्रे चक्रायुधायामति चामनाय ॥ रामस्त्रेव श्चहीतस्त्यतपसस्तस्यानु-
करो मुनीः सौमित्रेवद्या-
- ९ । दितुस्तमहिमा वाक्पालनामानुजः । यः श्रीमात्रयविक्रमैकवसतिर्भौतः स्थितः शा-
सने शुभ्याः श्रवणताकिनी-
- १० । भिरकरोदेकातपचा दिशः ॥ तस्मादुपेन्द्रचरितैर्जगतीम्यमानः पुत्रो बभूव विजयी
जयपालनामा । चर्मादि-
- ११ । वां श्रमयिता युधि देवपाशे यः पूर्वजे भुवनराज्यसुखान्वयेषीत् ॥ वसिन् धातुर्नि-
देव्राह्मणवति परितः प्रस्थिते
- १२ । जेतुमाशाः सीदशान्वैव कुरात्रिजपुरमजहादुत्कृष्टानामधीशः । सासाक्षमे चिराय
प्रणयिपरिहृतो विधदु-
- १३ । येन मूर्ध्ना राजा प्राग्ज्योतिषाणामुपशमितसमित् स(श)कृया यस्य चाज्ञां ॥ श्रीमान्
विग्रहपालस्तत्कुराजतश्चरि-
- १४ । व । जातः श्रवणनिताप्रसाधनविलोपिविमलासिञ्जहारः ॥ रिपवो येन मुर्ध्नि
विपदानास्यदीकृताः । पुरुषास्तु-
- १५ । वदीर्घाणां सुहृदः सम्पदामपि ॥ लज्जेति तस्य जलधेरिव जक्रुकन्या पत्नी बभूव
कृतचैवधवंशभूषा । यस्याः शुची-
- १६ । नि चरितानि पितुश्च वंशे पत्युश्च पावनविधिः परमो बभूव ॥ दिक्पालैः क्षिति-
पालनाय दधनं देवे विभक्ताः

- १७ । धियः श्रीनारायणपाददेवमङ्गलार्थां स पुण्योत्तर । सः सौखीपतिभिः शिरोमणि-
वचास्त्रिष्टुप्पीडोपलं न्यायोपा-
- १८ । तमलचकार चरितैः खरेव चर्मासनं ॥ यतः पुराणलौकानि चतुर्धर्मविधीनि च ।
आरिपुनो यतस्थानि चरितानि मचीभूतः ॥
- १९ । स्त्रीकृतः सुजनमनोभिः सत्यायितः सङ्गवाचनैः स्त्रीयैः । त्यागे न यो न्यधताम् देवं
मेऽङ्ग राजन् कथां ॥ भयादरातिभिर्यस्य रक्ष-
- २० । मूर्धनि विस्फुरन् । अचिरिन्दीवरश्लामो दृढश्चे पीतलोहितः ॥ यः प्रज्ञया च धनुषा
च जगद्दिनीय नित्यं न्यवीविशद्-
- २१ । नाकुलमात्मधर्मैः । यस्मार्थिनः सविधमेत्य भद्रं कृतार्था नैवार्थितां प्रति पुनर्विदधु-
र्मान्नीषां ॥ श्रीपतिरुच्छकर्मा विद्या-
- २२ । धरमायको महाभोगी । अनलसदृशःऽपि धाव्या यश्चित्रसुसमचरितैः ॥ बाह्यैरेव
विजगति शरच्चन्द्रजैरैर्यशो-
- २३ । भिक्षुंशे शोभासु कलु विभरासास वज्रादृष्टासः । सिद्धश्रीकामपि शिरसिजेभ्यर्चिताः
केतकीनां पचापीडुः सुचिरम-
- २४ । भवन् भङ्गशब्दानुमेयाः ॥ तपो ममाक्षु राव्यन्ते द्वाभ्यामुक्तमिदं द्वयोः । यस्मिन्
विग्रहपात्रेण समरेण भगीरथे ॥ + स कलु भा-
- २५ । गीरथीपथप्रवर्तमाननावाविधनैवाटसम्पादितसेतुवन्धविहितशैलशिरसेषीविध-
मात् निरातमयधनधनान्नमहा-
- २६ । श्यामायमानवासरलक्ष्मीसमारब्धसङ्गतलक्षदसमयसन्देहात् । उदीचीनानेकनरपति-
प्राभ्यतीकृताप्रमेयव्यवाचिनीवर-
- २७ । खुरोत्क्षान्तधूलौघसरितदिगन्तराक्षात् परमेश्वरसेवासमायातामेवज्जम्बुद्वीपभूपासा-
नमपादात् भरनमद्वनेः श्रीम्-
- २८ । इगिरिसमावासितश्रीमज्जयन्तवावारात् परमसौमते महाराज्याधिराजश्रीविद्वत्पा-
लदेवपादानुध्यातः परमेश्वरः पर-
- २९ । ममहारको महाराज्याधिराजः श्रीमन्नारायणपाददेवः कुमली । तीरभक्तकवैष-
यिकसुसम्भवाविच्छिन्नलो-
- ३० । पेतमकुतिकाग्रामे समुपगतामेवराजपुत्रान् । राजरा-
- ३१ । नक । राजपुत्र । राजामात्य । महासाम्बिविपक्षिक । महाचपटलिक । म-
- ३२ । हासामन । महाभोगपति । महाप्रतीहार । महाकर्ता । कृतिक । महा-
- ३३ । दोःसाधसाधनिक । महादण्डनायक । महाकुमारामात्य । राजस्थानीयोपरिक ।
दाभापरानिक । सौरोदरलिक
- ३४ । दाण्डिक । दाण्डपाशिक । शैलिक । मैलिक । खेप । प्रानपास । कोपप. ल ।
खण्डरक्ष । तदायुक्त । विमिगुक्त । इत्य-
- ३५ । शोष्ट्रनौबलव्याप्तक । किशोर । वसुधा । मेसहिष्यजानिका यक्ष । द्रुतपेवक्षिक ।
मसामनिक । अभिलमान । विषयपति ।
- ३६ । यामपति । तरिक । मोद । मासव । खर । ज्ञान । कुलिक । कल्लः । लाट । चाट ।
भट । सेवकादीन् । अन्याः कीर्तनान् ।

- १० । राजपादोपजीविनः प्रतिवाचिनो ब्राह्मणोत्तरान् । महत्तमोत्तमपुरोत्तमेदान् च खाद्य-
पर्यन्तान् । यथार्थं मानयति ।
- १८ । बोधयति । समादिशति च । मतमस्य भवतां । कलशयोते । महाराजाधिराज ।
श्रीनारायणपाददेवेन स्वयंकारितसहस्र-
१९ । यतनस्य तव प्रतिष्ठापितस्य । भगवतः शिवभट्टारकस्य । पाशुपतसाधार्यपरिवदस्य ।
यथार्थं पूजावलिषदसचनवक-
४० । आद्यर्थ । शयनासनस्नानप्रत्ययसैषण्यपरिष्काराद्यर्थ । अन्येषामपि स्वाभिमतानां ।
स्वपरिकल्पितविभागेन । स्वमवस्थामो-
४१ । गार्थस्य । यथोपरिलिखितमङ्कतिका पासः । स्वामीमाह्वयप्रतिगोचरपर्यन्तः । सतलः
सोद्वेगः । साधनसूक्तः । सजल-
४२ । खलः । समतोवरः । सोपरिकरः । सद्व्योपचारः । सचोरोद्वेगः । परिहृतव्य-
पीडः । अचाटभट्टप्रवेशः । अकिञ्चि-
४३ । त् प्रयासः । समस्तभागभोगकरश्चिररक्षादिप्रत्यायसमेतः । भूमिच्छिन्नन्यायेनाचन्द्रार्क-
क्षितिसमकाष्ठं यावत् स्नातापि-
४४ । चोरात्मनश्च पुच्छयशोऽभिष्टब्धे । भगवतां शिवभट्टारकमुद्दिश्य शासनीकृत्य प्रदत्तः ।
ततो भवद्भिः सर्वैरेवानु-
४५ । मन्त्रां भाविभिरपि भूपतिभिर्मैदानफलजैरवात्पद्मरसे च महानरकपातभया-
दानमिदमनुमोक्ष पातनीयं प्र-
४६ । तिवाचिभिः चेचकैश्चाज्ञानवशविधेयीभूय यथाकाष्ठं समुचितभागभोगकरश्चिररक्षा-
दिस्वर्चप्रत्यायोपवयः का-
४७ । र्यं इति । संवत् १० वेशाब्ददिने ९ तथा च धर्मोनुशङ्कितः श्लोकाः । वज्रभिर्वसुधा
मुक्ता राजभिः समरादिभिः ।
४८ । यस्य यस्य यदा भूमिस्तस्य तस्य तदा फलं ॥ षट्पदैवसहस्राणि स्वर्गे मोदन्ति भूमि-
दः । आक्षेप्ता चानुमन्ता च तान्येव न-
४९ । रके वसेत् ॥ स्वदत्ताभ्यर्चनां वा यो चरेत् वसुध्वरां । स विष्ठायां कृमिर्भूला
पिण्डभिः सह पच्यते । सर्वानेतान् भाविनः
५० । पार्थिवेन्द्रान् भूयो भूयः प्रार्थयत्येष रामः । सामान्योऽयमर्थसेतुर्नृपाणां काले काले
पालनीयः क्रमेण ॥ इति क-
५१ । मलदृष्टान्मविन्दुश्लोकां त्रियमनुष्यिन्य मनुष्यजीवितस्य । सकलमिदमुदाहृतस्य
बुद्धा न हि पुरयैः परकीर्तयो विलो-
५२ । ष्याः ॥ वेदानौरुमुमतमं(?) वेदिता ब्रह्मतर्यं(च) या सर्वानु नृपिणः परमः सार्ध-
मङ्गैरपीती(ति) । यो यज्ञानां समुदितमहाभू-
५३ । क्षिणानां प्रसेता भट्टः श्रीमानिह स गुरवो दुतकः पुच्छकीर्तिः ॥ श्रीमता मय-
दानेन शुभदासस्य शु(क)मुना । इदं सा-
५४ । भनमुत्कीर्णं सत्यामतद्वज्रमना ॥

TRANSLATION.

Be it auspicious ! May Daśabala, whose heart is resplendent with the jewel of mercy, whose loved mistress is benevolence, whose mind was washed clean of the mud of book-learning by the pure water of the river of perfect Sambodhi knowledge, who, having conquered the promptings of desire * * * acquired eternal fame,—may the Lord of the universe, prosper.

Now Go-pála Deva made his family the abode of prosperity. (Lakshmi). Well able to sustain the weight of the earth, the only asylum of kings whose wings having been clipt by fear sought his protection, always devoted to protect honor, he was the home of heroism. Of him was born the auspicious king Dharma-pála, whose greatness was as beauteous as the ripple of the milky ocean. Having conquered Indrarāja and other kings, he (Dharma-pála) earned the glorious S'ri, goddess of fortune, whom he presented as a sacrifice to the father of wealth, Vámana, the wielder of the discus.

Like Ráma, that saintly king had a brother of equal merit, in Vák-pála, who was in glory the counterpart of the son of Sumitrá (Lakshmana). This prince, the abode of justice and valour, living under the rule of his brother, placed all the quarters under one umbrella, by divesting them of all hostile armies.

Unto him was born a son named Jaya-pála, by whose imperial virtues the earth was sanctified. Overcoming all enemies to religion, he established his elder brother, the heroic Deva-pála, in the dominion of the earth. When by the order of his brother he issued forth to conquer, the lord of Utkala, oppressed from a distance by his very name, forsook his home. Bearing that prince's order on his head, the king of Prágjyotisha, trembling from fear, withdrawing his army, with all his dependents lived under him.

The auspicious Vighraha-pála, enemyless from birth, was born his son. His spotless sword was like the water which wiped away the beauty of the wives of his enemies. By him his enemies were made the objects of heavy misfortune, and his friends long-lived. Lajjá, the ornament of the Haihaya race, became his wife, even as the daughter of Jahnú (Ganges) is that of the Ocean, and her virtuous conduct alike purified her father's and her husband's race.

He, through the essence of the guardians of the quarters gave birth, in her, for the protection of the earth, to the auspicious Náráyana-pála Deva, the virtuous whose feet became resplendent by the light of the crown-jewels of kings. He has sanctified his throne by his justice. Kings, forsaking the *Lainga Purāṇa*, the source of the fourfold blessings, wish to follow his conduct. He is esteemed in the mind of good men, and confirmed (in his position) by his own dependents. By his charity he has suppressed in

his country the expression, "give, O king."* Through his fear his sword, though dark as a blue lotus, appears flame-coloured to his enemies. He, by his wisdom and his own virtues, has kept the helpless earth always in the path of justice. Attaining his protection, beggars no longer turn their minds to seeking alms. Lord of wealth, doer of no wrong, patron of learned men, and endowed with great affluence, he is in his glory like unto a blazing fire (*anala*), and yet by his conduct he is like Nala.† His fame, bright as the rays of the autumnal moon, spread over the three worlds, wears a resplendence which even the loud laughter of Śiva cannot rival, and the garlands of Ketaki flowers on the hands of Siddha ladies (are so eclipsed that their existence can be ascertained only) by the hum of bees (about them). Two persons did say to two others, "let penance be mine and the kingdom thine;" once to him (Nārāyaṇa-pāla) by Vighraha-pāla, and once to Bhagiratha by Sagara.

In his victorious camp in Mudgagiri on the bank of the Bhāgirathī river, where he has made a bridge of boats, which seems to rival a line of rocky hills where the roaming of excessively dense (crowds of) elephants has so clouded the glory of day-light, as to produce the impression of an approaching rainy season, where the dust raised by the hoofs of the countless cavalry of the only king of the north, has covered the quarters, where the earth has sunk low by the weight of the innumerable kings of Jambudvīpa who had assembled to serve the great lord, the mighty sovereign, the supreme king among kings, the auspicious Nārāyaṇa-pāla Deva, the successor of the devout follower of Sugata, the supreme king among kings, the auspicious Vighraha-pāla Deva, prospers. To subordinate kings (rājārāṇaka), to princes (rājaputra), to the Prime Minister (rājāmātya), to the minister of Peace and War (mahā-sandhi-vighrahika), to the Chief Justice (mahākṣha-paṭalika) to the Generalissimo (mahāsāmanta), to chief commanders (mahasenapati), to the grand warder (mahāpratihāra), to the chief investigator of all works (mahākartākritika), to the chief obviator of difficulties (mahādoṣasādhāsādhaniṇi), to the chief criminal judge (mahādāṇḍa-nāyaka), to chief minister of the heir-apparent (mahākumārāmātya), to viceroys (rājasthānino upādhiṇi), to Investigators of crimes (doshāparādhiṇi), to the chief detective officer (choroddharaniṇi), to the mace-bearers (dāṇḍika), to the keeper of the instruments of punishment (dāṇḍapāsika),

* The words in the original are *Deyam me anga-rājan*; and the word *anga* may be taken as an interjection = O, or an adjective meaning chief, great or principal, or a noun, the name of a country including the western part of Bengal. In the last two cases the word *rājan* should change into *rāja* to be in Samāsa, the first is therefore the right meaning. But it has probably been used as a *double entendre*.

† Nala, the famous king of Vidarbha noticed in the Mahābhārata. The comparison is forced for the sake of the alliteration in the words *nala* and *anala*.

to collectors of customs (s'aulkika), to commanders of divisions (gaulmika), to supervisors of cultivation (kshetrapa), to boundary rangers (prántapála), to treasurers (koshapála), to superintendents of wards (khaṇḍa-raksha), to inspectors of wards (tadáyuktaka), to the superintendents of appointments (viníyuktaka), to the superintendent of elephants, horses, camels, and war-boats, (hastyaśva-nau-balavyáprítaka), to the superintendents of mares, colts, cows, buffaloes, sheep and goats (kisora-vaḍavá-go-mahishyájávikádhyaśha), to the chief of swift messengers (drutapeshanika), to messengers (gamága-manika), to swift messengers (abhitvamána), to commissioners of districts (vishayapati), to head officers of villages (grámapati), to superintendents of boats (tarika), to (men of the different tribes of) Goda, Málava, Khaśa, Huna, Kulika, Kalláta, Láta, Cháta, and Bhaṭa,*—to all servants and others who are not specified here, to all who have assembled here in the village of Mukuṭika in the division of Kuksha on the bank of the river, as also to the inhabitants of the neighbouring villages, who live by service under the king, from the respected Bráhmaṇ to the lowest Meda, Andha and Chaṇḍála—to all these he sends appropriate greetings and acquaints and commands them. Be it known unto you that in the village of Kalá-sapota, where Náráyana-pála Deva himself has established thousands of temples, and where he has placed the honorable Śiva Bhaṭṭa and Paśupati Achárya, I, Náráyana-pála Deva, for purposes of due worship, for the offering of oblations *charu* and *gajnas*, for the performance of new ceremonies, and for the dispensation of medicines, bedding and seats, to diseased persons, and for the purpose of enabling them to enjoy without let or hindrance the village as defined, I have given the above-named village of Mukuṭika, along with its surrounding grazing-grounds, with all the waters and lands belonging to it, above and below the surface, together with the mango and the madhuka trees, with all its low and barren lands, along with its rents and tolls, including all fines for crimes, and rewards for catching thieves. In it there shall be no molestation, no passage permitted for *Chañas* (jugglers) and *Bhañas* (troops). The land shall not be a trouble (to the possessors) who shall have the enjoyment of all shares, privileges, gold &c., and other income. I grant this to be enjoyed as many years as there are holes in the earth, and as long as the sun and the moon shall endure, in order that the virtue and fame of my parents and of myself may be enhanced. I have given this edict engraved to you, honorable Śiva.

Be it then respected by all; and future kings, knowing the grievous sin that is incurred by destroying the great merit of grants-of-land, should uphold it. Let the neighbours and those who till the land, be obedient to

* Bábu Pránnáth Pandit's paper on the Chittagong plate (*ante* XLIII, pp. 318f) and Mr. Westmacott's paper on the Tarpandighi plate, (*ante* XLIV, pp. 1f) contain many interesting notes on the meanings of these official titles.

my commands. They should render to the donees their respective shares, privileges, rent, gold and all other dues. Dated the 9th Vaiśákha, Samvat 17.

The following are excerpts for those who dread the mandates of virtue :

The earth has been enjoyed by Sagara and many other kings. The fruit (of grants-of-land) belongs to him to whom the land belongs for the time.

The donor of land enjoys heaven for sixty thousand years. He who abrogates or prompts others to abrogate such a gift, suffers in hell for a like period.

He who resumes land given by him or others, becoming a worm, rots in ordure along with his forefathers.

Again and again doth Ráma entreat all future kings to protect this common bridge of virtue.

Knowing riches and life to be as unsteady as water on a lotus petal, no man should intentionally attempt to deprive another of his reputation.

Bhaṭṭa Gurava, the spiritual guide of the king, the proficient in the difficult knowledge of God through the Vedánta, versed in all the Vedas and the Vedángas, and the most proficient in the performance of sacrificial rites, has composed this. Mudgadása, son of Subhadása, an inhabitant of Sat-sámataṭa, has engraved this edict.



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A S K E T C H
OF THE
TURKI LANGUAGE

AS SPOKEN IN
EASTERN TURKISTAN

(Kàshghar and Yarkand.)

BY
ROBERT BARKLEY SHAW, F.R.G.S.,

Political Agent, late on special duty at Kàshghar,

Gold Medallist, Royal Geographical Society.

PART II.
VOCABULARY,
TURKI—ENGLISH.

WITH LIST OF NAMES OF BIRDS AND PLANTS BY J. SCULLY, Esq.,
SURGEON, H. M. BENGAL ARMY (*late on special duty, at Kàshghar*).

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NOTES FOR GUIDANCE

IN CONSULTING THE VOCABULARY.

In many words the letters **و**, **ا** and **ي** are either inserted or omitted according to the fancy of the writer. If not found under one spelling, then look under the other. Thus **مکړ** = **سکيز** = **ساکیو**, **ریل** = **یل**, **بارماق** = **یرماق**, **کیلماک** = **کلمک**.

If not found with a **و** (medial) try **او** and *vice versa*: e. g., **سورماق** = **ساورماق**.

When not found with an **ف** look under **پ** (e. g. **فچاق** = **پچاق**). So also with **ب** and **پ**, **ج** and **چ**, **ک** and **گ**, **غ** (final) and **ق**. In MSS. **ی** is often found written **پ** e. g. **پوفا** for **یوفا**.

Many verbs ending in **-la-mak**, **-la't-mak**, **-la'n-mak** and **-la'sh-mak** will not be found here, as they are formed at will from other words (often Persian or Arabic), with a sense that is obvious on inspection. **La-mak** gives a simple verbal meaning (generally transitive), **la't-mak** a causative one, **la'n-mak** a reflective (or simply intransitive) or passive one, **la'sh-mak** a reciprocative or collective one. E. g. **köz-la-mak** = to eye (from **köz** "an eye"); **yichdq-la-maq** = to knife; **ghazab-la't-maq** = to make angry (to cause to be angry); **sust-la'n-mak** = to become, or make one self, inactive; **rü-ba-rü-la'sh-mak** = to go, or come, or be, opposite, or facing, one another (from **rü-ba-rü** "face to face," P.).

The ordinary final aspirate **g**, which in many Persian words is pronounced merely as a short **a** (or, more correctly, is imperceptible after the *fatha* of the last consonant)—is by some Turki scribes employed to represent the short vowel **a** even before another consonant. This is due to the tendency of the Turkis to use some visible letter to represent even the short vowel sounds, a tendency carried even to the extent of employing one and the same letter for the long and the short vowel (after our occidental fashion: cf. *all* and *an*. See Gram. p. 15, at bottom). E. g. **قیلسالار** or **قیلسالار** properly, according to Arabic methods, **قیلسلر**; and even **بدونینگ** (for

بدنینگ (and **قدومیني** for **قدومیني** or **قدومیني**), which are of course pure misspellings. It will save some puzzles if this be remembered in reading MSS.

The mark *zamma* (**ُ**) is often used to represent the **ü** sound which approaches the sound of **i**. Thus **دین** has been found for **دین** "faith." To Turki ears the sound **ü** seems nearly to approach the sound of **i**, (*dyün* for *dün*). Hence in practice also **و** and **ي** are sometimes interchanged: e. g. **ایرون** *irün* = **ایرین** *irin*. Final **ü** is pronounced by them almost like an English final **y**, as in "very;" e. g., **ütrü** pronounced *ütry*.

JOURNAL

OF THE

ASIATIC SOCIETY OF BENGAL.

Part I.—HISTORY, LITERATURE, &c.

EXTRA NUMBER

To Part I for 1878.

A Vocabulary of the Language of Eastern Turkistán.—By R. B. SHAW, Political Agent. With two Turki Vocabularies of Birds and Plants by J. SCULLY, Esq., Surgeon, H. M. Bengal Army (late on special duty, Kàshghar).

Abbreviations :—P. signifies Persian derivation ; A. Arabic ; T. Turki ; K. K. K. and Y. signify respectively that the words so marked are used in the Kàzzàk, Khoqand, Kàshghar, and Yarkand dialects. P. T. means partly Persian, partly Turki, &c.

Rec. and *coll.* mean *reciprocal* and *collective*, *tr.* and *intr.* signify *transitive* and *intransitive*, *refl.* and *pass.* stand for *reflective* and *passive*, *caus.* stand for *causative* ; *p. p.* means *post-position*, *prd.* stands for *pronounced*, *pron.* for *pronoun*.

- آباد چیلیق *ábád-chi-liq* (subs.) a well-inhabited or cultivated place, P. T.
 آباد لیق *ábád-liq* (subs. and adj.) an inhabited place ; inhabited,
 آبدان *ábdan* (adj.) good. [cultivated, P. T.]
 آبگار *ábgar* (adj.) occupied, full of care, busy.
 ابوز *abuz* (adj.) learned, well-read.
 ابوشقا *abushqa* (adj.) old, advanced in years.
 اپ *ap*, intensitive particle prefixed to *âq* "white."
 آبا *âpa* (subs.) elder sister. [ing].
 اپارتماق *apár-t-mâq* (v. caus.) to cause to take away (from follow-
 اپارماق *apár-mâq* (v. tr.) to take away [contr. from *alip-bármâk*].
 آفتاب *âftâb* (subs.) the sun, (for *âftâb* P.). [âftâba, P.).
 آفتابه *âftâba* (subs.) a disk-shaped basin for hand-washing, (for
 آفتابهچی *âftâba-chi* or *âftaba-chi* (subs.) Basin-bearer, the title of
 a high dignitary at the Court of Khoqand (spelt by the
 Russians *Autobashi*).

اپقوت *apqut* (subs.) the back part of the boot above the heel.

آت *át* (subs.) name.

آت *át* (subs.) horse.

ات for *atr* which see.

اتا *atá* (subs.) father.

[sian dynasty).

انابيك *atá-beg* (subs.) father-king, patriarch (the name of a Per-

اناداش *atá-dash* (adj.) of the same father.

آناشماق *át-a'sh-máq* (v. rec.) to name together; to assign to, to entitle so and so to. [nick-name.

آناغ *átágh* (subs.) renown, high name, sur-name, title; also

آناغلاشماق *átágh-la'sh-máq* (v. coll.) to combine to give a name.

آناغلاماق *átágh-la-máq* (v. tr.) to give a name, sur-name or nick-

آناغليق *átágh-liq* (adj.) called, sur-named. [name.

آناق *átáq* (subs.) same as *átágh*.

آناقلاشماق *átáq-la'sh-máq* (v. coll.) same as *átágh-lash-mák*.

آناقلاماق *átáq-la-máq* (v. tr.) same as *átágh-la-máq*.

آناقليق *átáq-liq* (adj.) same as *átágh-liq*.

اناليق *atá-liq* (sub.) one who is in the place of a father, a guardian, tutor. Title of a high official in Turkistán.

آناماق *át-a-máq* (v. tr.) to give a name to, to name.

آناماق *át-a'n-máq* (v. pass.) to be given a name to, to be named, to be renowned. [but into large cylinders.

آنباش چاي *átbásh-chái* (subs.) a sort of Tea compressed like brick-tea,

آنتورماق *át-tur-máq* (v. caus.) to cause to throw, to cause to beat out cotton (from *át-máq*).

آنداش *át-dásh* (subs. and adj.) name-sake, having the same name.

آنقرچي *át-qu-chi* (subs., from *át-máq*) a thrower, a shooter; or specially, a thrower or beater out of cotton.

آنقروماق *át-qur-máq* (v. caus.) the same as *át-tur-máq*, (but without its special meaning of beating out cotton).

آنقوزماق *át-kuz-màq* (v. caus.) the same as *at-qur-maq*.

آنقرلاق *át-qu-làq* (subs.) a kind of grass of which tinder is made.

آنلاماق *át-la-máq* (v. tr.) to stride across. [to step over.

آنلاندورماق *át-la'n-dur-máq* (v. caus.) to cause oneself to bestride, viz.,

آنلانات *át-la'n-màq* (v. intr. or refl.) to be astride, to bestride, to sit or mount on horse back, to ride.

- آنلیغ *át-ligh*—1, (subs.) a rider, cavalier ; 2, (adj.) named,
 آنلیق *át-liq*, the same as *at-ligh*. [called.
 آنماق *át-máq* (v. tr.) to throw, propel, project, shoot ; also to spin.
 آنمیش *át-mish* (num.) sixty (for *alt-mish*).
 آنیز *átiz* (subs.) a bed, or portion of land divided off for irri-
 آنیشماق *át-ish-màq* (v. rec.) to throw, &c., at one another. [gation.
 آنیلماق *át-il-màq* (v. pass.) to be thrown or shot ; (of a gun), to
 آج *ách* (adj.) hungry. [go off.
 آج *ich* (subs.) the interior, the inside.
 آچارچیلدیق *áchár-chi-liq* (subs.) famine (? from *ách-ár*, the con-
 tinuative of *ách-màq*).
 اجراتماق *ajra-'t-máq* (v. caus.) to cause to be in a divided state, to
 اجراشماق *ajra-'sh-máq* (v. rec.) to divide from one another. [divide.
 اجرالماق *ajra-'l-máq* (v. pass.) to be divided, separated.
 اجراماق *ajra-máq* (v. intr.) to be in a divided condition.
 اجریق *ajriq* (subs.) dhub grass (whose roots run along under-
 اجو *aju* (subs.) a black bear. [ground).
 آچقو *ách-qu* (subs.) a key, i. e. opener (from *ách-màq*).
 آچلیق *ách-liq* (subs.) hunger (from *ách*).
 آچماق *ách-máq* (v. tr.) to open.
 آچماق *ách-máq* (v. tr.) to be hungry.
 آچوق *ách-uq* (v. adj.) open.
 آچیتماق *ách-it-mak* (v. caus.) to cause to become bitter or sour
 (see *ách-i-mak*).
 آچیشماق *ách-ish-màq* (v. rec.) to open to one another, or with one
 another.
 آچیشماک *ách-ish-mak* (v. rec.) to be made sour together (see *ách-i-*
 آچیغ *achigh* (adj.) sour, bitter, angry. [mak).
 آچیغ تاش *achigh-tásh* (subs.) alum.
 آچیغلتماق *achigh-la't-máq* (v. caus.) to cause to become angry.
 آچیق آچوق *áchiq* or *áchuq* (adj.) open.
 آچیق لیق *áchiq-liq* (subs.) openness, candour, good humour.
 آچیق تاش *áchiq-tash* (subs.) alum.
 آچیقماق *áchiq-màq* (v. intr.) to be hungry.

- آچىلمات *ách-il-máq* (v. pass.) to be opened.
 اچىماك *achi-mak* (v. intr.) to become sour; to smart (as a wound).
 آختا *ákhta* (adj.) castrated.
 آختاچى *ákhta-chi* (subs.) castrator.
 آختارتماق *ákhtar-t-máq* (v. caus.) to cause to search, or seek.
 آختارىشماق *ákhtar-ish-máq* (v. rec.) to search one another.
 آختارماق *ákhtar-máq* (v. tr.) to search, seek.
 آخشام *áksham* (adv.) last night, yesterday evening.
 آخشاملىق *áksham-liq* (subs.) the evening of this day, this evening.
 اخلات *akhlát* (subs.) sweepings.
 آخورماق *akhur-máq* (v. tr.) to shout, to call loudly.
 اداش *adash* (subs.) name-sake, (more specially) a friend, companion (for انداش).
 اداشماق *adash-máq* (v. intr.) to lose the way.
 آدرا قالسون *adra-qálsun* (part of verb) May he remain uncared for [an imprecation] KAZ.
 آدمچىلىك *adam-chi-lik* (subs.) humanity, kindness. P. T.
 آدير *adir* (subs.) uneven broken ground.
 آديم *adim* (subs.) a pace, step.
 آدىلشماق *adim-la-'sh-máq* (v. recip.) to pace against one another.
 آدىلماق *adim-la-máq* (v. intr.) to pace, step.
 ار *är* [ér] (subs. and adj.) male, masculine, (see اير).
 آرا *ära* (subs.) the midst, the middle (often used with *da* adverbially). Expressions: *Ara-ga tüshmak* = to intervene; *ära-ga sælmäq* = to interpose; *ära-gha kirmak* = to interfere, to intervene.
 آرابه *araba* (subs.) a cart (generally with two wheels and shafts).
 اراچالاماق *ära-cha-la-máq* (v.) to separate.
 آراده *ära-da* (adv. & post-p.) in the midst.
 آرال *arál* (subs.) island. (Qu. passive form from *ära* "middle.")
 آرالاتماق *ära-la-t-màq* (v. caus.) to cause to visit or inspect [see *ära-la-màq*].
 آرلاش *ära-lash* (adv.) middle-wards, intermixedly, confusedly.

- آراشتورماق *ára-lash-tur-máq* (v. caus.) to cause to be mixed, to mix
 آراشماق *ára-lash-máq* (v. intr.) to become intermixed. [(trans.).
 آرالاماق *ára-la-mák* (v. tr.) to inspect.
 آراليق *ára-liq* (subs.) a bribe, present [to one who intervenes *ára-ga* "in the midst"].
 آرام آلماق *árám-álmáq* (v.) to take rest, to repose, P. T.
 آرامدان *àràmadàn* (subs.) a tall tree whose leaves are made into Tea.
 آران *arán* (subs.) butter milk.
 اران *ärän* [prd. *eren*] (adv.) unwillingly, reluctantly, with
 آرا *arpa* [often prd. *ápá*] (subs.) barley. [difficulty.
 آرا *árba* (subs.) cart, waggon (see *áraba*).
 آرباتاق *àrba't-máq* (v. caus.) to cause to use incantations (for the
 purpose of curing wounds, &c.).
 آرباشماق *àrba'sh-máq* (v. recip.) to say charms in opposition to the
 supposed causes of ill, to say charms in company.
 آرباق *àrbá'q* (subs.) a spoken charm for curing snake bites, or
 procuring fine weather.
 آرباقچي *arbaq-chi* (subs.) one who uses such charms.
 آرباماق *arba-máq* (v. tr.) to say charms for curing bites, or pro-
 curing fine weather.
 ارت *art* (subs.) a low Pass, a water-parting or watershed,
 rising ground. *Often used in composition, as: Kizil-*
art, Muz-art, &c. and often pronounced and written at.
 آرتماق *árt-màq* (v. tr.) to load (a horse, cart, &c.).
 آرتماق *árt-máq* (v. intr.) to remain over, to exceed.
 آرتنورماق *árt-tur-máq* (v. caus.) 1, to cause to load; 2, to cause to
 remain over.
 آرتوغراق *ártugh-ráq* (adj.) more [comparative of *ártugh*, much].
 آرتوق آرتوغ *ártugh* or *ártuq* (adj.) excessive, much, many. (From
ártmáq).
 آرتوقلوق *ártuq-luq* (subs.) quantity, great amount (muchness).
 آرتيش *ártish* (subs.) the pencil cedar, "Juniperus excelsa" КХ.
 آرتيشماق *árt-ish-màq* (v. coll.) to aid one another in loading (from
art-máq).

آرتيلمات *art-il-máq* (v. pass.) to be laden (said of the load) ; (of a man) to be carried hanging on to a horse without sitting on his back.

آرتينماق *art-in-máq* (v. refl.) ditto.

آرچا *árcha* (subs.) the pencil cedar [see *ártish*].

آرچيتماق *árchi-t-mák* (v. caus.) to cause to clear, &c., (see *archi-mák*). [mak].

آرچيشماق *árchi-sh-mák* (v. recip.) to clear in company (see *archi-*

árchi-mák (v. tr.) to clear, to free from obstructions, to peel (as a fruit).

ارزانچي ليق *arzán-chi-liq* (subs.) cheapness, abundance, P. T.

ارزانليق *arzán-liq* (subs.) ditto.

ارزيتماق *arzi-t-máq* (v. caus.) to cause to please.

ارزيشماق *arzi-sh-máq* (v. recip.) to please one another, to be agreeable to one another.

ارزيماتق *arzi-máq* (v. intr.) to please, to be agreeable [gov. the person in *gha*].

ارسلان *arelàn* (subs.) a lion.

ارغا *argha* (subs.) remedy, aid, method of action.

ارغاسيز *argha-sêz* (adj.) helpless, unfortunate.

ارغمچي *arghamchi* (subs.) rope, cord. (For following):

ارغمچين *arghamchin* (subs.) do.

ارغوماق *arghumáq* (subs.) a large horse, a charger.

آرقا *árqa* (subs.) the back, the rear.

آرقاسيده *árqa-si-da* (post-pos.) behind, after (lit. at its back).

آرقاغ *árqagh* (subs.) the woof (of a stuff), the cross-wise threads placed by the shuttle.

آرقاتق *árqáq* (subs.) ditto. [support.

آرقالماق *árqa-la-máq* (v.) 1. to carry on the back ; 2. to back up,

آرقالانماق *árqa-la'n-máq* (v. p.) to be backed up, supported, &c.

آرقان *árqan* (subs.) rope, KAZ.

آرقاد *árqad* (subs.) the woof, KAZ.

آركا *árka* [prd. *ërka*] (subs.) a pet child.

آركيشي *är* [er] *kishi* (subs.) a male person.

- ارکاک *ärkak* (subs.) a male [of animals as well as mankind].
 ارماق *är-mâq* (v. tr.) to separate, divide.
 ارمانلیق *ärman-liq* (adj.) desirous, troubled with longing, P. T.
 ارمن *ärman* (subs.) a kind of tall grass, a weed. [to peel.
 ارتماق *arüt-mâq* (v. caus.) to make clean, to clean, to rub clean ;
 اروغ *arugh* (verbal adj.) thin, out of condition (from *aru-mâq*).
 اروق *arug* (adj.) ditto.
 اروقچی لیک *arug-chi-liq* (subs.) thinness, want of condition.
 اروق لیک *arug-liq* (subs.) ditto.
 آرماق *aru-mâq* (v. intr.) to be tired, fatigued.
 آرونماق *ärü'n-mâq* (v. p.) to be cleaned.
 آری *ari* (subs.) a wasp.
 آری *äri*—1. (conj.) further, moreover, verily ; 2. (post-p.) beyond
 (see *nari*). [clean.
 آریتماق *arit-mâq* (v. tr.) to clean [see *arüt-mâq*] to cause to be
 آریماق *ari-mâq* (v. intr.) to be clean. [water-course.
 آریغ *arigh*, 1 (adj.) clean, (from *ari-mâq*) ; 2 (subs.) an artificial
 آریغلانماق *arigh-la't-mâq* (v.) to cause to be cleaned. [another.
 آریغلاشماق *arigh-la'sh-mâq* (v. recip.) to cleanse together or one
 آریغلاماق *arigh-la-mâq* (v. tr.) to cause to become clean, to cleanse.
 آریق *äriq* [prd. *eriq*] 1. (subs.) the whole ; 2. (adj.) clean.
 آریق *äriq*—1. (subs.) a water channel, small canal ; 2. (adj.) thin.
 آریقلاماق *ariq-la-mâq* (v.) 1. [same as *arigh-la-mâq*] ; 2. to become
 thin, out of condition.
 آریق لیک *ariq-liq* (subs.) 1. cleanness ; 2. thinness.
 آریک *ürük* (subs.) any thing sorted out or selected for its size.
 آریکماق *ürük-la-mak* (v. tr.) to sort out or select for size.
 آریلماق *ari'l-mâq* (v. pass.) to be cleansed.
 آریلماق *är-il-mâq* (v. pass.) to be separated, divided (from *är-mâq*).
 آریم *ërim* (subs.) inauguration, any solemnity or customary
 observance at the beginning of any work.
 آریمچیک *ürimchik* (subs.) cheese.
 آز *üz* or *iz* (adj.) foot-mark, track.
 آز *áz* (adj. and adv.) little, small ; not much.

- آزاده *ázáda* (adj.) neatly clothed, natty, careful of one's appearance, P.
- آزار بیرماک *ázár bir-mak* (comp. v.) to scold, abuse, rebuke, upbraid, P.T.
- آزاق *ázáq* (adj. *used also* subs.) low, a low place, lower.
- آزاینماق *áz-ai't-máq* (v. caus.) to cause to diminish.
- آزایماق *áz-ái-máq* (v. intr.) to diminish, to become less.
- آزداماک *izda-mak* (v. tr.) to search for, (from *iz*).
- آز دورماک *az-dur-mak* (v. tr. caus.) to cause to break (tr.), to make some one break or tear.
- آز دورماک *az-dur-mák* (v. t. caus.) to cause to lose the way.
- آز راق *áz-ráq* (adj. and adv.) smaller, fewer; less.
- آز غاق *áz-gháq* (subs.) a person who often loses his way.
- آز غال *áz-ghál* (subs.) an erratic water-cut, a deep channel cut by a torrent or inundation (when the water has left its usual bed).
- آز غان *áz-ghan* (subs.) a thorn-bush or tree.
- آز غنه *áz-ghana* (adj. and adv.) tiny, little.
- آز غورماق *az-ghu'r-máq* (v. tr.) to cause to lose the way.
- آز غوشماق *az-ghu'sh-máq* (v. coll.) to lose the way in company.
- آز غون *az-ghun* (subs.) some influence which causes men to lose their way (a local superstition in the Takla-makán desert).
- آز دل ده *azal-da* (adv.) from eternity, A. T.
- آزما *ázma* (subs.) [see *ázghal*].
- آزماق *az-máq* (v.) to lose the way.
- آز مال لاماق *ázmál-la-máq* (v. tr.) to desire, wish for.
- آزو *ázu* (subs.) a back tooth, grinder, tush, *KAZ*.
- آزوغ *ázugh* (subs.) ditto.
- آزوق *ázuq* (subs.) ditto.
- آزرق *ázuq* (subs.) daily food.
- آز یقتورماق *áziq-tur-máq* (v. caus.) to cause to lose the way.
- آز یقشماق *áziq-ish-máq* (v. coll.) to lose the way in company.
- آز یکماق *áziq-máq* (v.) to lose the way.
- آسانراق *ásán-ráq* (adj.) easier, P. T.
- آسانلیق *ásán-liq* (subs.) easiness, ease, P. T.

- آستا *asta* [for *ahista*, A.] (adv.) slowly, quietly.
 استا *ustá* [for *ustád*, A.] (subs.) a master workman.
 آستاراق *asta-râq* (adv.) more slowly, P. T.
 آستانه *ástána* (subs.) a grand tomb of some celebrated person,
 (lit. threshold, P.)
 آستین *ástin*-(adj.) low.
 آستین ده *ástin-da* (post-pos.) below, beneath.
 آستین *üstin* (adj.) high, superposed.
 آستین ده *üstin-da* (post-pos.) above, upon.
 آسراتاق *ásra't-mâq* (v. caus.) to cause to take care of, attend to.
 آسرا لاق *ásra'l-mâq* (v. pass.) to be taken care of, attended to.
 آسراماق *ásra-mâq* (v. tr.) to take care of, attend to.
 آسماق *ás-mâq* (v. tr.) to hang, to suspend.
 آسماك *üs-mak* (v. tr.) to strike with the horns, to butt.
 آسرشماك *üs-üş-mak* (v. recip.) to butt at one another (as the Chinese lower orders are said to do in fighting), to strike one another with the horns (of animals).
 آسغ *issigh* } (adj.) hot, warm.
 آسغ *issiq* }
 آش *ash* (subs.) food, [generally pilao]. Also the liquid in which skins are soaked. P.
 آشا *áshá* (adj.) more, exceeding.
 آشاتاق *ásha-t-mâq* (v. caus.) to cause to eat, to feed.
 آشاراق *ásha-râq* (adj.) [comparative of *áshá*] more.
 آشاماق *ásha-mâq* (v.) to eat, to take a meal, KAZ.
 آشپاز *ash-paz* (subs.) a cook, P.
 آشنا *üşta* (adj.) bleached, washed white.
 آشناجي *üşta-chi* (subs.) a bleacher.
 آشتان *üştán* (subs.) wide trousers, drawers.
 آشداش *ásh-dâsh* (subs.) a meal-fellow, one who eats from the same
 آشسيز *ásh-siz* (adj.) without food, destitute. [dish.
 آشقار *üşqar* (subs.) potash.
 اشكاه *Ishk-âgha* (subs.) Lord of the Gate (a title) (see ايشك).

- آشلاتماق *ášh-la-t-maq* (v. caus.) to cause to tan (leather), to have tanned.
- آشلاتماك *ish-la-t-mak* (v. caus.) to cause to work.
- آشلاماق *ášh-la-maq* (v. tr.) to tan leather.
- آشلاماك *ish-la-mak* (v. tr.) to work, labour, do.
- آشليق *ášh-liq* (subs.) food, provisions.
- آشماق *ášhmaq*, 1. (v. tr.) to cross, surmount (a pass) ; 2. (v. intr.) to remain over or exceed.
- آشورماق *ášh-ur-maq* (v. caus.) 1. to cause to cross, or surmount ; 2. to cause to remain over or exceed.
- آشوغراق *ášhugh-raq* (adj.) more, more excessive.
- آشوق *ášhuq* (subs.) sheep's knuckle bones (for playing with).
- آشوق *ášhuq* (adj.) much, excessive.
- آشوقنورماق *ášhuq-tur-maq* (v. caus.) to cause to do quickly, to cause to make haste.
- آشوقماق *ášhuq-maq* (v. intr.) to make haste, KH. KAZ.
- آشيق *ášhiq* (adj.) much [same as *ášhuq*.]
- آشيقماق *ášhiq-maq* [same as *ášhuq-maq*.]
- آت *see* آط
- آغا *ágħa* (subs.) elder brother, KAZ.
- آغاج *ágħáčħ* (subs.) wood, KAZ.
- آغاچا *ágħa-cha* (subs.) woman, wife.
- آغدارماق *ágħ-dar-maq* (v. caus.) to cause to fall, to upset, (spec.) to pull one off a horse.
- آغدارارشماق *ágħ-dar-ush-maq* (v. recip.) to cause one another to fall.
- آغدارولماق *ágħ-dar-ul-maq* (v. caus. pass.) to be caused to fall, (or simply) to fall.
- آرشماق *ágħ-dar-ish-maq* (same as *ágħ-dar-ush-maq*).
- آغداريلماق *ágħ-dar-il-maq* (same as *ágħ-dar-ul-maq*).
- آغرامچي *aghramchi* for ارغمچي (subs.) a rope.
- آغريتماق *ágħri-t-maq* (v. caus.) to cause to suffer grief or pain, to grieve (tr.)

- آغرىغ *aghriḡ* (adj.) ill, sufferung.
 آغرىق *aghriq* (the same as the last).
 آغرىقچان *aghriq-chan* (subs.) a person who is always ill, an invalid.
 آغرىماق *aghri-mâq* (v. intr.) to be ill or suffering, to be in grief.
 آغز *aghz* (subs.) mouth. [subside, to faint.
 آغماق *agh-mâq* (v. intr.) to fall on one side (as a horse-load), to
 اغو *aghu* (subs.) a spur or projection of the mountain side
 over which the road has to rise in order to cross it.
 آغور *aghur* (subs.) a stallion, an entire horse.
 آغور *aghur* (adj.) heavy, large, valuable, important.
 آغىر *aghir* (adj.) [same as last.]
 آغىل *aghil* (subs.) a cattle shed, enclosure for cattle.
 آغىناتماق *agh-in-a't-mâq* (v. refl. caus.) to cause to roll.
 آغىناتماق *agh-in-a-mâq* (v. refl.) to roll one's self, turn over, roll (as
 a horse) [Qu. from *aghmâk* with the sense of "to fall
 آق *aq* (adj.) white. [on oneself."]
 آقارا تماق *aq-ar-'t-mâq* (v. caus.) to cause to be white, to make white.
 آقارماق *aq-ar-mâq* (v. intr.) to be white, to become white.
 آقباش *aq-bash* (adj.) white headed.
 اقنا *aqta* (adj.) castrated.
 آقنارتماق *aqtar-'t-mâq* (v. caus.) to cause to search.
 آقنارماق *aqtar-mâq* (v. tr.) to search.
 آقناش *Aq-tâsh* (Prop. name) White-stone.
 آقتاغ *aq-tâgh* (comp. subs.) *lit.* white mountain, *i. e.* snowy-
 range (as distinguished from mountain ridges on which
 the snow is not perpetual and which are called *Qara-*
tâgh). Locally this word is often used as a proper name
 applied to the particular snow mountains of the neigh-
 bourhood; but its use in general geography should be
 supplemented, as in native use, by prefixing the name of
 the locality, as in English we say: the Brighton Downs,
 the Wiltshire Downs, &c. The neglect of this causes
 much confusion, and false geography. There is also a
 place called *Aq-tâgh* from the colour of its rocks.

- آقتماق - آقیزماق *aq-it-maq* or *aq-is-maq* (v. caus.) to cause to flow, to pour.
 آقئورماق *aq-tur-maq* (v. caus.) [the same as last].
 آقئورماق *uq-tur-maq* (v. caus.) to cause to understand, to instruct.
 آقساق *aqsaq* (adj.) lame.
 آقماق *uq-maq* (v. intr.) to understand.
 آقماق *aq-maq* (v. intr.) to flow.
 اکا *aka* (subs.) elder brother.
 اگري - اگرو *agrü, agri* (adj.) crooked, evil-disposed.
 آل *äl* (adj.) pale red, pink.
 آلا *äla* (adj.) variegated, spotted.
 آلابولا *äla-bula* (adj.) of intermixed colours.
 آلاچ *Äläch* (Prop. name) a comprehensive name given to the tribes of Kazzaks and Kirghiz, from some eponymous ancestor.
 آلاچا *äla-cha* (subs.) a kind of striped cotton cloth.
 آلاماق *älar-maq* (v. tr.) to look with anger upon, to change countenance with anger.
 آلاشاقشاق *ala-shaq-shaq* (subs.) magpie.
 آلاقان *älaqan* (subs.) the hollow of the hand.
 آلامان *älamán* (subs.) a robber, bandit.
 آلانگان *alanggan* (subs.) a word used with repetition *alanggan shalanggan*, to express a confused mass of things.
 آلاي *Alai* (Prop. name) a high plateau north of the Pamir
 آلبان *älbán* (subs.) land-tax. [steppes.
 آلبانچي *älbán-chi* (subs.) one who pays land-tax.
 آلبستي *albasti* (subs.) a night-mare, an incubus.
 آلتار *ältao* (num. subs.) all six, the whole six.
 آلتاي *Altai* (Pr. n.) a mountain range south of Siberia; also the fox-skins brought thence.
 آلتايان *ältai-lan* (num. subs.) the whole six.
 آلتميش *ält-mish* (num.) sixty.
 آلتون *ältun* (subs.) gold.
 آلتونچي *ältun-chi* (subs.) gold-smith.

- ألتين *áltin* (adj.) low ; *áltin-da* (post-pos.) below [gov. gen.]
 ألتینچی *álti-'n-shi* (num.) sixth.
 ألجوشماق *álju-'sh-maq* (v. rec.) to twaddle to one another, use empty talk together.
 ألجوماق *álju-maq* (v. intr.) to twaddle, gossip.
 ألچین *alchín* (subs.) a measure of length of about 28 inches (Russian *arachine*).
 ألدانماق *álda-'t-maq* (v. caus.) to cause to deceive.
 ألداشماق *álda-'sh-màq* (v. rec.) to deceive one another.
 ألداماق *álda-maq* (v. tr.) to deceive, play off.
 ألدانماق *álda-'n-màq* (v. pass.) to be deceived, &c.
 ألدی *áldé* (? *àld*) (subs.) front, presence.
 ألدیده *áldi-da* (post-pos. gov. gen.) in front of, in presence of.
 ألدیراتماق *áldera-'t-màq* (v. caus.) to cause to do quickly, to hasten, to hurry (tr.)
 ألدیراش *álderash* (adj.) quick, hurried (applied to the work not to the agent).
 ألدیراشتورماق *áldera-'sh-tur-màq* (v. coll. caus.) to cause to make haste in company.
 ألدیراشماق *áldera-'sh-màq* (v. coll.) to make haste, or be busy in company.
 ألدیراماق *áldera-maq* (v. intr.) to make haste, be busy.
 ألقا *alqa* (subs.) ear-ring, ear-ornament, KAZ. from A.
 ألقات *álqat* (subs.) a small wild plum.
 ألقاش *álqash* (subs.) the act of blessing, or praying for the welfare of another.
 ألقاشماق *álqa-'sh-màq* (v. rec.) to invoke blessing on one another, to invoke blessings together.
 ألقاماق *álqa-màq* (v. tr.) to bless, invoke blessings on.
 ألقيش *álqish* [same as *álqash*].
 ألما *álma* (subs.) apple.
 ألماتي *Almati* (Prop. name) a place north of Issiqkùl, the site of the Russian cantonment of Vierny (called *Almati* from its groves of apple-trees).

آلماق *álmáq* (v. tr.) to take ; *also* to overcome in any contest.
Much used in composition : e. g. *àlip-kelmak* "to bring", *àlip-kirmak* "to take into", *àlip-bàrmàq* "to take away" &c.

آلمايلىق *Alma-liq* (Prop. name) the name of several places in Central Asia.

ألوان *alwán* (subs.) "Turkey-red," the cotton stuff dyed that colour and so called. (? from A.)

آلو بالو *álu-bálu* (subs.) plum.

آلو بخار *álu-bokhár* (subs.) plum.

آلوچه *álu-cha* (subs.) a small plum.

ألugh *ulúgh* (adj.) great, large, grand, venerable (referring to moral qualities or position chiefly), *also* elder.

ألugh-la-sh-máq *ulúgh-la-'sh-máq* (v. recip.) to exalt one another.

ألugh-la-máq *ulúgh-la-máq* (v. tr.) to make great, to exalt.

ألugh-liq *ulúgh-liq* (subs.) greatness, dignity.

ألش *alish* (v. subs.) a taking ; *spec.* the head of a canal or derivatory water-course, where the water is *taken* out of the main stream.

أل-ish-máq *ál-ish-máq* (v. recip.) to mix (with the hands), (lit. to take together).

أل-in-máq *ál-in-máq* (v. pass.) to be taken.

أل-in-il-máq *ál-in-il-máq* (a redoubled passive) to be taken.

أماچ *ámách* (subs.) a plough.

أموت *ámút* (subs.) a large kind of pear, P.

أموروت *ámurut* (subs.) *the same*, P.

انا *ana* (interject.) here, this, look here !

آنا *ána* (subs.) mother.

آناك *ünak* (subs.) a milch-cow.

أنت *ánt* (subs.) oath, engagement, vow ; *ánt ichmak* = to drink an oath, i. e., to swear.

انجي *anji* (subs.) a stack.

آنچه *án-cha* (pron.) that much [from *an*, oblique of *ul*, which see].

آنچه *'ncha* (term.)—fold ; e. g. *yüs-ancha* "a hundred-fold."

- اندا *án-da* (adv.) lit. in that ; *but specially* : in that place, there.
 انداغ *án-dagh* (pron. and adv.) like that, such ; *also* like that, so.
 انداغراق *án-dagh-râq* (pron. and adv.) more like that.
 انداق *án-dâq* [same as *án-dagh*].
 انداقچه *án-dâq-cha* (pron. and adv.) lit. to an amount similar to that, such like, so much.
 انداین *án-dâin* [same as *ándâq*] КН.
 اندین *ân-din* (adv.) lit. from that ; *but specially* : from that place, thence. [sition].
 انگ *âng* (obsol. subs.) understanding [only used in compounds].
 آنکا *ân-ga* [prd. *anga*] (pron.) to him, her or it [*an*, the oblique form of *ul*].
 آنگاه *ân-ga-cha* (adv.) to that amount, up to that time.
 آنکسیز *âng-siz* (adj. and adv.) without understanding ; *also* suddenly, without premeditation.
 آنکلاماق *âng-la-'t-mâq* (v. caus.) to cause to understand, to instruct.
 آنکلاشماق *âng-la-'sh-mâq* (v. recip.) to understand one another.
 آنکلاماق *âng-la-mâq* (v. tr.) to understand, to be aware.
 آنکلانماق *âng-la-'n-mâq* (v. pass.) to be understood or known, (refl.) to make itself known (of news &c.), to come to one's knowledge.
 او *u* [for *ul*] (pron.) that, he, she, it.
 او *âu* (subs.) sport, hunting, shooting, *also* game [? from
 او *âwa* (int.) yes, well, all right. [Persian *âhu*].
 آورا - او *âwâ* (subs.) bird's-nest.
 آوات *âwât* (subs.) shame, modesty.
 آراتماق *âwât-mâq* (v. intr.) to feel shame or modesty.
 آواتماق *âwât-t-mâq* (v. tr.) to quiet a child.
 آراق *âwâq* (subs.) crumbs, débris, (from *wâa-mâq*).
 آوالاشماق *âwa-la-'sh-mâq* (v. recip.) to agree together, to consent together, to combine [from *âwa*].
 آوالاشماق *âwa-la-'sh-mâq* (v. recip.) to build nests in company (as swallows or rooks).

- آرالماق *üwa-la-mâq* (v.) 1. to build nests; 2. to rub, to wring.
 آوالماق *üwa-'l-mâq* (v. pass.) to be crumbled, to fall into débris.
 اوماق *üwa-mâq* (v. tr.) to crumble or break-up.
 اوانماق *üwa'n-mâq* (v. intr.) to be quietly occupied (of a child).
 اوب *üb*, an exclamation used in lifting weights.
 اوبا *üba* (subs.) a pestilence, epidemic, from A. *waba*.
 اوبدان *obdân* (adj.) good.
 اوبا *upa* (subs.) a white powder used by women to improve their complexions.
 اويتورماق *öp-tur-mak* (v. caus.) to cause to kiss [used of the person who submits to the operation].
 اوبچين *öpchin* (subs.) a set of four horse-shoes with the nails.
 اوبراتماق *öpra-t-mâq* (v. caus.) to cause to crumble to pieces, to break up, crumble (tr.).
 اوبراماق *öpra-mâq* (v. intr.) to crumble, to fall to dust; to grow old.
 اوبرق *öpruq* (adj.) crumbled, ruinous (from preceding).
 اوبرولماق *öpru-'l-mâq* (v. pass.) to be crumbled [also *öpra-'l-mâq*].
 اوپكا *öpka* (subs.) lungs; wrath, anger, offence.
 اوپكا قاقماق *öpka-qâqmâq* (v. tr.) to beat one's shoulders and back with the fresh lungs of an animal. A Turki custom supposed to be a remedy in illness. [offend].
 اوپكالا تماق *öpka-la-'t-mak* (v. caus.) to cause one to be offended, to
 اوپكالا شماق *öpka-la-'sh-mak* (v. recip.) to be offended with one another.
 اوپكالا ماق *öpka-la-mak* (v. intr.) to be offended, to take offence.
 اوپماق *öp-mak* (v. tr.) to kiss, to embrace.
 اوپرپ *upup* (subs.) a kind of bird with a crest, a hoopoo (?).
 اوپوچ *öpüch* (subs.) a kiss.
 اوبرشماق *öp-üşh-mak* (v. recip.) to kiss one another.
 اوت *üt* (subs.) gall.
 اوت - اوط *ot* (subs.) fire.
 اوت *ot* (subs.) grass.
 اوت *uwüt* (subs.) malt, sprouting grain used for making a sort of beer, KAZ. [*mâq*].
 اونانماق *ota-'t-mâq* (v. caus.) to cause to pluck out weeds (see *otâ-*

- اوتاشماق *otá-'sh-máq* (v. recip.) to pluck weeds in company.
- اوتاغ *otágh* (subs.) a temporary abode, a Kirghiz tent.
- اوتاغات } *otághat* (subs.) a plume, a crest of peacock's feather worn
اوتاغه } by high dignitaries under the Chinese.
- اوتاق *otáq* (same as *otagh*).
- اوتاك *ütak* (subs.) knee-boots worn in Turkistán.
- اوتاكچي *ütak-chi* (subs.) a bootmaker.
- اوتاماق *otá-máq* (v. tr.) to pluck up weeds or grass.
- اوتاماك *üta-mak* (v. tr.) to read or say prayers, to recite.
- اوتاد *otáo* (same as *otágh*) КН.
- اوترا *otra* (subs. & adj.) the midst; middle, intermediate; [*otra-si-da* = in the midst of it] ? for *urta*. [mediate.
- اوترانجي *otrá-n-chi* (subs. & adj.) the middle one; middle, inter-
- اوترو *ütrü* (adv.) opposite, facing (? from *üt-mak* "to meet").
- اوتروك *ütrük* (subs.) lie, untruth, KAZ. (? for *durogħ*, P.).
- اوتروكچي *ütrük-chi* (subs.) liar, KAZ.
- اوتقاچ *ot-qàch* (subs.) dry shavings &c. for lighting a fire. In the bazàrs of Yarkand and Kàshghar these are sold in the form of short logs of wood 3 or 4 inches thick, and so accurately sliced to the thickness of stout paper, that when all the slices are put together and tied in the form of the original log, no separation can be detected at first sight. This is done with a special tool. The ends are dipped in sulphur before sale, so that they can be used for raising a flame from the embers of overnight.
- اوتقازماق *ut-qàz-máq* (v. caus.) [same as following].
- اوتقوزماق *ut-quz-máq* (v. caus.) to cause to sit. [recite.
- اوتكارماك *üt-kar-mak* (v. caus.) to cause to pass over or through, to
- اوتكازماك *üt-kaz-mak* (v. caus.) [the same as the last].
- اوتكور *üt-kür* (adj.) sharp, (viz. 'which passes through').
- اوتكورماك *üt-kür-mak* (v. tr. and caus.) to sharpen, [also same as *üt-kar-mak*].
- اوتكوزماك *üt-küz-mak* (v. tr. and caus.) do. do.
- اوتلاق *ot-làq* (subs.) a grassy place, a meadow, a pasture.

اوتماك *äwu-'t-mak* (v. caus.) to cause to increase.

اوتماك *üt-mak* (v. tr.) to pass, to go over *or* through, to penetrate, to cross, to meet. *Metaph.* to go through *or* accomplish any work; to pass over *or* forgive a fault, &c.

اوتنا *ütna* (subs.) a temporary loan of any thing.

اوتني *ütni* (subs.) [the same].

اوتور *utur* (adj.) straight.

اوتورلماق *utur-la-maq* (v. tr.) to make straight.

اوتورماق *utur-maq* (v. intr.) to sit.

اوتوك *ütük* (subs.) high riding boots, Кн. [(from *üt-mak*).

اوتون *ütün* (subs.) pardon obtained by some-one's intercession

اوتون *otun* (subs.) fuel, fire-wood. (From *ot* "fire").

اوج *üwuch* (subs.) a handful.

اوج *öoh* (num.) three.

اوج *uch* (subs.) a feud, a state of enmity.

اوج *uch* (subs.) an end, a point.

اوجا *ucha* (subs.) the posteriors, the back.

اوجارقوش *öchär-qush* (compound subs.) a flying bird [from *öch-maq* = to fly, and *qush* = a bird].

اوجارليق *öchär-liq* (subs. and adj.) a creature that flies; *also* flying, possessed of the power of flight.

اوجاش *uchash* (adj.) at feud, inimical.

اوجاشماق *ucha'-sh-mak* (v. recip.) to be at feud with one another [from an un-used verb *ucha-mak*].

اوجاغ *uchágh* (subs.) a fire-place, cooking-place.

اوجاق *ucháq* (subs.) [the same].

اوجاك *üchak* (subs.) entrails, Кн.

اوجاو *öch-ao* (num. subs.) all three, the three.

اوجاولان *öch-do-lan* (num. subs.) all three.

اوجاي *üchäi* (subs.) entrails.

اوجايلان *öch-äi-lan* (num. subs.) all the three.

اوجراتماق *öchra-'t-maq* (v. caus.) to cause to meet.

اوجراشماق *öchra-'sh-maq* (v. recip.) to meet one another.

اوجراماق *öchra-maq* (v. intr.) to meet, to encounter on the road [governors *ga*].

- اوچقان *öch-qáq* (adj.) flying about much [from *öch-máq*].
 اوچقون *uch-qun* (subs.) a spark.
 اوچكك *uch-kak* (adj.) burning badly, becoming extinguished rapidly (of fire-wood, or fire) [from *uch-mak*].
 ارچكو *üchkü* (subs.) a goat.
 ارچلاشماق *úwuch-la-'sh-máq* (v. recip.) to take by handful together [from next].
 ارچلاماق *úwuch-la-máq* (v. tr.) to take by handful [from *úwuch*].
 اوجما *üjma* (subs.) mulberry.
 اوجماق *ujmáq* (subs.) Heaven, the abode of the blessed.
 ارچماق *öch-máq* (v. intr.) to fly.
 ارچماك *uch-mak* (v. intr.) to become extinguished, to go out (as fire).
 اوچور *öchör* (subs.) news, intelligence, answer.
 ارچورماق *öch-ör-máq* (v. caus.) to cause to fly.
 اوچورماك *üch-ur-mak* (v. caus.) to cause to become extinguished, to extinguish, to put out.
 اوچورشماق *öch-ösh-máq* (v. recip.) to fly together.
 اوچوق *uchuq* (adj.) open [same as *àchiq*].
 اوچولاسي *öch-ö-la-si* (num. subs.) all the three of them.
 اوچولانچي *öch-ö-lan-chi* (num. subs.) third, КН.
 اوچون *uchun* (post-pos.) because of, for, on account of [governs the genitive].
 اوچونچي *öch-ön-chi* (num. adj.) third.
 ارخ *ukh* (interj.) an exclamation of pain or fatigue, (Cf. German "ach").
 اوخراشماق *ukh-ra-'sh-máq* (v. recip.) to snort together [of horses].
 اوخراماق *ukh-ra-máq* (v. intr.) to snort.
 اوخشاتماق *okhsa-'t-máq* (v. caus.) to make like, to equalize; also, to
 اوخشاش *okhsash* (adj.) like, equal to. [compare.
 اوخشاشماق *okhsa-'sh-máq* (v. recip.) to be alike, to resemble one another,
 اوخشاماق *okhsa-máq* (v. intr.) to be like, to resemble; to be probable, to be likely; to be fulfilled (a promise).
 اوخشورماق *ukhsu-máq* (v. intr.) to retch, vomit.

- اورخلائق *ukh-la-'t-máq* (v. caus.) to cause to sleep.
 اوخلاشماق *ukh-la-'sh-máq* (v. coll.) to go to sleep together.
 اوخلاماق *ukh-la-máq* (v. intr.) to sleep, to go to sleep.
 اوخور *ökhör* (subs.) a manager (for horses). *From P.*
 اوخوراماق *ökhör-a-máq* (v. intr.) to sneeze (of a horse).
 اورا *úra* (adj.) standing upright.
 اورا *ura* (subs.) a hole in the ground for storing grain, a garner, a caché.
 اورادان *öradan* (subs.) a colouring matter, madder.
 اوراغ *örágh* (subs.) a covering, the cloth bound round a package.
 اوراق *ördq* (subs.) a sickle, KH. KAZ.
 اوراچي *ördq-chi* (subs.) a reaper, KH. KAZ.
 اورالاش *úra-lash* (adv.) upwards, up-hill.
 اوراماق *öra-máq* (v. tr.) to wind, wrap.
 اوراو *örau* (subs.) a cloth wound round anything (the same as *öragh*), KAZ.
 اورتا *urta* (subs. and adj.) middle; *urta-da* (adv.) in the middle.
 اورتاق *urtàq* (subs.) partner; also friend, intimate.
 اورتاقلاماق *urtàq-la-máq* (v. intr.) to be in partnership.
 اورتاماق *urta-mak* (v. tr.) to set on fire, to burn (chiefly the dry grass of a hill-side). [enflamed.
 اورتانماق *urta-'n-mak* (v. refl.) to burn itself, to burn (intr.), to be
 اورتانگ *úrtang* (subs.) a staging post, a traveller's rest-house, a stage (? from *urta*, qu. half-way-house).
 اورتانگچي *úrtang-chi* (subs.) a man in charge of a staging post, a post-master or post-rider. [audience.
 اوردا *úrda* (subs.) a Royal residence, a Court, a Royal place of
 اورداک *ördak* (subs.) a duck [wild or tame].
 اوردورماق *úr-dur-máq* (v. caus.) to cause to strike.
 اوردورماک *ör-dör-mak* (v. caus.) to cause to braid the hair.
 اورغاچي *urgha-chi* (subs.) a female (of man or beast), KAZ.
 اورغاق *urgháq* (subs.) a sickle.
 اورگاتماک *örgà-'t-mak* (v. caus.) to cause to learn, i. e. to teach.
 اورگاچ *örkach* (subs.) a camel's hump.

- اورگانشماک *örgä-'n-ish-mak* (v. recip.) to learn together.
- اورگانماک *örgä-'n-mak* (v. refl.) to instruct oneself, *i. e.* to learn.
- اورگوت *örgöt* (subs.) winnowed grain prepared for the mill.
- اورلاتماک *ör-la-'t-mak* (v. caus.) to cause to climb.
- اورلاماک *ör-la-mak* (v. intr.) to climb; to rise, to mount up.
- اورلانماک *ör-la-'n-mak* (v. refl.) to climb, (cf. "*se cramponner.*")
- اورماق *úr-máq* (v. tr.) to strike, to beat.
- اورماق *ur-máq* (v. tr.) to reap, to cut grass.
- اورماک *ör-mak* (v. tr.) to braid the hair.
- اورماک *örmak* (subs.) a rough loom without treadles for weaving coarse carpets, &c.
- آورماک *uour-mak* (v. tr.) to turn over, to reverse. *Yüz uourmak* = to turn the face, to face round.
- اورمالاشماک *ürma-la-'sh-mak* (v. recip.) to crawl together.
- اورمالاماک *ürma-la-mak* (v. intr.) to crawl, to creep.
- اورناشتوروماق *urna-'sh-tur-máq* (v. recip. caus.) to appoint to each his place, to settle each in place.
- اورناشماق *urna-'sh-máq* (v. recip.) to be each in his own place, to be respectively settled.
- اورناماق *urna-máq* (v. intr.) to be settled, fixed, (from *urun*).
- اوروشتوروماق *ur-ush-tur-máq* (v. caus.) to cause to fight.
- اوروشماق *ur-ush-qáq* (adj.) given to fighting, quarrelsome.
- اوروشماق *ur-ush-máq* (v. recip.) *lit.* to strike or beat one-another, *i. e.* to fight.
- اوروشماک *ör-ösh-mak* (v. recip.) to braid one-another's hair.
- اوروغ *urugh* (subs.) seed; also offspring, family, clan.
- اوروغ توققان *urugh tuqqàn* (subs.) relations, family.
- اوروغلاتماق *urugh-la-'t-máq* (v. caus.) to cause to get thin, &c. (see *urugh-la-màq*).
- اوروغلاشماق *urugh-la-'sh-máq* (v. recip.) to make one-another thin, to get thin together [see next word].
- اوروغلاماق *urugh-la-máq* (v.) 1. to get thin; 2. to sow seed; 3. to muster strong in family, to swarm.
- اوروق *see urugh; üruq* (adj.) thin, in bad condition.

اورقلاماق *uruq-la-mâq* [the same as *urugh-la-mâq*].

اوروک *uruk* (subs.) apricot.

اورولماق *ur-ul-mâq* (v. pass.) to be struck, to be beaten.

اورولماک *ör-öl-mak* (v. pass.) to be braided [of hair.]

اورولماک *uwur-ul-mak* (v. pass.) to be turned, reversed, upset.

اورون *urun* (subs.) place, station. [ing].

اورونماق *ur-un-mâq* (v. refl.) to strike one's self against (in pass-

اورونوشماق *ur-un-ush-mâq* (v. refl. recip.) to strike against one another

اوز *öz* (pron.) self. [in passing.

اوز *uz* (adj.) handsome, pretty, beautiful.

اوزا *uza* (subs.) surface, top ; *uza-si-da* = on the top of it.

اوزاتماق *uza-'t-mâq* (v. caus.) *lit.* to cause to go far (*éloigner*) ;
to reach out a thing ; to go out to meet, *or* to escort,
a guest.

اوزاماق *uza-mâq* (v. intr.) to go far.

اوزاق *uzâq* (adv.) far, (*éloigné*).

اوزالماک *uz-la-mak* (v. tr.) to top, *or* take the top off any thing, to
skim [from *uza*].

اوزانگو *uzangu* (subs.) a stirrup.

اوزبک *Öz-bak* (Pro. name) a certain tribe of Turki race, the ruling
tribe in Bokhâra and Khiva. [run.

اوزدورماق *öz-dür-mâq* (v. caus.) to cause to go a-head, to cause to out-

اوزدورماک *üz-dür-mak* (v. caus.) to cause to break by pulling, to cause
to pull in pieces.

اوزگا *öz-ga* (adj.) *lit.* to itself ; *i. e.* separate, different.

اوزگاچه *öz-ga-cha* (adv.) in a separate *or* different manner, otherwise,
changed (in a bad sense) [e. g. *ish özgacha boldi* "affairs
have gone to grief"].

اوزگارتماک *özga-r-'t-mak* (v. caus.) to cause to change colour [from
öz-ga-r-mak].

اوزگارتماک *özga-r-'sh-mak* (v. recip.) to change colour together.

اوزگارماک *özga-r-mak* (v. intr.) to become different (of colour) ; to
change colour, to become discoloured. [consciousness.

اوزلök *öz-lök* (adv.) by one's self *or* selves ; (subst.) self-ness *i. e.*

- اوزلیک *öz-lik* [the same as the last].
- اوزماق *öz-maq* (v. intr.) to out-run, to get foremost in a race.
- اوزماک *üz-mak* (v. tr.) to break off by pulling, to pull in pieces, to [tear away].
- اوزوق *uzuq* (subs.) food, provisions.
- اوزوک *özök* (subs.) a finger-ring.
- اوزوک *üz-ük* (subs.) a piece broken off, a fragment [from *üz-mak*]; (adj.) fragile, slender.
- اوزولماک *üz-ül-mak* (v. pass.) to be broken by pulling, to be torn away
- اوزوم *üzüm* (subs.) a grape. [from *üz-mak*].
- اوزوم *öz-öm* (pron.) I myself; *öz-ömiz* = we ourselves.
- اوزون *uzun* (adj.) long, tall.
- اوزنگ *öz-öng* (pron.) thou thy-self; *öz-öngiz* = ye yourselves.
- اوزی *öz-i* (pron.) he himself, &c.
- اوزیچه *öz-i-cha* (adv.) of one's self, by one's self.
- اوزاق *usdaq* (adj.) thirsty.
- اوزال *usal* (adj.) bad, evil, КН. Каз.
- اوزال-ламаق *usal-la-maq* (v. intr.) to become bad, to go to the bad.
- اوزсамاق *ussa-maq* (v. intr.) to be thirsty, to thirst.
- اوزتا *ustá* (subs.) a teacher; an artisan, from P.
- اوزتара *ustara* (subs.) a razor, P.
- اوزтанг *ustang* (subs.) a canalized stream, a trunk canal.
- اوزтурмак *us-tur-mak* (v. caus.) to cause to become large, to cause to increase, to increase (tr.).
- اوزتون *üstün* (subs.) pillar, column [for P. "situn"].
- اوزتون *üstün* (adj. adv.) upper; above; *üstün-da* upon, (obl. possessed form of following word: for *üst-in* = "the top of it").
- اوزتی *üst-i* (subs. poss.) its top; *üst-i-da* = on its top.
- اوزма *usma* (subs.) a black dye for the hair, P.
- اوزсамاق *us-maq* (v. tr.) to fill up grain, &c. into a sack, to shovel or scoop anything into a bag.
- اوزмак *üs-mak* (v. tr.) to butt, to strike with the horns.
- اوزмак *us-mak* (v. intr.) to increase, to grow, to get big.

- اوشا *u-sha* (pron.) that [contr. from *u-shal*].
- اوشاتماق *usha-'t-mâq* (v. tr.) to break in pieces, to break up.
- اوشاق *ushâq* (adj.) little; (subs.) bits, débris, powder; also a menial servant.
- اوشال *u-shal* (pron.) that [from *ul* and *shul*].
- اوشالماق *usha-'l-mâq* (v. pass.) to be broken up.
- اوشانچه *u-shan-cha* (pron. and adv.) to that amount; [*shul* becoming *shan* in the oblique cases].
- اوشاندا *u-shan-da* (adv.) *lit.* in that very [place]; there.
- اوشانداق *u-shan-dâq* (pron. and adv.) like that, so.
- اوشبو *ush-bu* (pron.) this, this very [from *shu* and *bu*].
- اوشنكا *u-shan-ga* (pron.) to that very (place), thither.
- اوشني *öshni* (subs.) shoulder.
- اوشورماق *ush-ur-mâq* (v. caus.) to cause to exceed, to magnify, to increase, (see *âshur-mâq*).
- اوشوق *ushuq* (subs.) sheep's knuckle-bones used for playing.
- اوشوق *ushuq* (adj.) much, very much.
- اوشوقماق *ushuq-mâq* (v. intr.) to agitate oneself, to hasten (see *âshuq-mâq*).
- اوشوك *ushuk* (subs.) frost, cold [as it affects vegetation].
- اوغراماق *ughra-mâq* (v. tr.) to encounter.
- اوغرلاتماق *ughar-la-'t-mâq* (v. caus.) to cause to steal or rob.
- اوغرلاشماق *ughar-la-'sh-mâq* (v. recip.) to rob one another.
- اوغرلاماق *ughar-la-mâq* (v. tr.) to thieve, to rob.
- اوغري *ughri* (subs.) thief.
- اوغل see اوغول
- اوغلاق *ughlâq* (subs.) a kid, also a game on horse-back played with the body of a kid.
- اوغلان *ughlan* (subs.) a male child, a boy.
- او غوج *ughuch* (subs.) a rolling-pin for pastry.
- اوغوت *ughut* (subs.) malt.
- اوغور *ughur* (subs.) a mortar in which grain is pounded.
- اوغوز *ughuz* (subs.) milk of the cow during a day or two after the birth of the calf, (not drinkable).

- اوغول *ughul* (subs.) a male child, son, boy. [*màq*].
 اوفر اتماق *ufra-'t-màq* (v. caus.) to cause to crumble [same as *öpra-'t-*
 افر اتماق *ufra-màq* (v. intr.) to crumble, [same as *öpra-màq*].
 اوفر ق *ufruk* (adj.) crumbled, ruinous [*öpruq*].
 اوفكا *ufka* (subs.) lungs; anger [see *öpka*].
 اوفكا لاماك *ufka-la-mak* (v. intr.) to take offence [see *öpka-la-mak*].
 اوفماك *uf-mak* (v. tr.) to kiss [see *öpmak*].
 اوق *oq* (subs.) a projectile; an arrow, a bullet; also the pole of
 a cart or plough; the beam of an oil press.
 اوقا *oqa* (subs.) gold lace (real or imitation).
 اوقات *auqat* (subs.) subsistence, sustenance, maintenance [A. with
 a special meaning acquired]. [*màq*].
 اوق تورماق *uq-tur-màq* (v. caus.) to cause to understand [from *uq-*
 اوق شورماق *oqshu-màq* (v. intr.) to retch, vomit.
 اوقماق *uq-màq* (v. tr.) to understand, to comprehend, to take in.
 اوقوتماق *oqu-'t-màq* (v. caus.) to cause to read, to instruct, to teach.
 اوقوشماق *oqu-'sh-màq* (v. recip.) to read in company.
 اوقولماق *oqu-'l-màq* (v. pass.) to be read.
 اوقوماق *oqu-màq* (v. tr.) to read, to recite.
 اوكا *uka* (subs.) a younger brother.
 اوكاي *ugaï* (adj.) step-: e. g. *ugaï-bala*, a step-son or daughter.
 اوكنا *uqta* (subs.) defalcations in the matter of public revenue,
 by which either the prince or the private payers of
 revenue are cheated.
 اوكنام *uktam* (adj.) same, KAZ.
 اوكچه *ukcha* (subs.) the kernel (in any stone-fruit).
 اوكچه *ukcha* (subs.) heel. [sit.
 اوكزا *ugza* (subs.) a roof, generally a flat roof on which one can
 اوكسوز *uk-süz* (adj.) left an orphan, without parents, KAZ.
 اوكسوماك *uksu-mak* (v. intr.) to sit aside in grief, to fret, also to dimi-
 اوكماك *ug-mak* (v. tr.) to rub into powder, KAZ. [nish, KAZ.
 اوكوت *ögöt* (subs.) winnowed grain prepared for the mill [the
 same as *örgöt*].

- اوگورتماک *ukur-'t-mak* (v. caus.) to cause to bellow.
 اوگورتماک *ugur-'t-mak* (v. caus.) to cause to turn (tr.), to make some-
 one turn something.
 اوگورماک *ukur-mak* (v. intr.) to bellow.
 اوگورماک *ugur-mak* (v. tr.) to turn over, to turn round, to turn aside.
 اوگوروشماک *ukur-ush-mak* (v. recip.) to bellow at one another, to bellow
 in company.
 اوگوروشماک *ugur-ush-mak* (v. recip.) to turn over together (tr).
 اوگوز *ukuz* (subs.) an ox, КХ.
 اوگوز *uguz* [the same,] КАЗ.
 اوگولماک *ug-ul-mak* (v. pass.) to be crumbled.
 اوگونماک *ukun-mak* (v. intr.) to regret, to be sorry.
 اوگونوچ *ukunuch* (subs.) regret, sorrow.
 اوکی *uki* (subs.) owl. [un].
 اول *ul* (pron.) that, he, she, it (oblique, generally *an* sometimes
 اولات *ulat* (subs.) pestilence (on man or beast) [see *ül-mak*].
 اولاد *ulär* (subs.) a snow pheasant (*Tetraogallus tibetanus*).
 اولاشتورماق *ula-'sh-tur-maq* (v. rec. caus.) to cause to catch up a party.
 اولاشتورماک *ülash-tur-mak* (v. rec. caus.) to cause to partition, or
 distribute.
 اولاشماق *ula-'sh-maq* (v. recip.) to unite with others, [specially] to
 catch up a party,
 اولاشماق *äu-la-'sh-maq* (v. recip.) to hunt together [see *äu*].
 اولاشماک *ülash-mak* (v. tr.) to distribute, to divide, see اولوش.
 اولاغ *ulagh* (subs.) a beast of burthen, a baggage animal.
 اولاغلیق *ulagh-liq* (subs.) an owner of baggage-animals, (adj.)
 appertaining to baggage-animals.
 اولاق *uläq* [the same as *ulägh*].
 اولاق *äuläq* (subs. and adj.) privacy, seclusion; private, secluded.
 اولاقشورماق *ulaq-tur-maq* (v. caus.) to cause to stray, to drive away
 from a herd or flock, КАЗ.
 اولاقلاماق *äuläq-la-maq* (v. intr.) to make private, [used of a place,
 not of a person].

- اولقاماق *uldq-maq* (v. intr.) to stray, to go astray, Kaz.
 اولاماق *du-la-maq* (v. tr.) to hunt, to shoot, to kill in hunting.
 اولاماق *ula-maq* (v. tr.) to join, unite.
 اولانگ *ulang* (subs.) a horse's girth.
 اولتا *ulta* (adj.) incorrect, mistaken, wrong.
 اولتان *ultan* (subs.) the sole of a boot, Kaz.
 اولتورغورماق *ultur-ghur-maq* } (v. caus.) to cause to sit, to seat.
 اولتورغوزماق *ultur-ghuz-maq* }
 اولتورگوزماق *ül-tür-ghüz-mäk* (v. redupl. caus.) to cause to kill, *lit.* to cause to cause to die (see *ül-mak*).
 اولتورماق *ultur-maq* (v. intr.) to sit, to be seated.
 اولتورماک *ül-tür-mak* (v. caus.) to kill, *lit.* to cause to die.
 اولجا *ulja* (subs.) booty, plunder, loot.
 اولجالاشماق *ulja-la-'sh-maq* (v. recip.) to loot one-another.
 اولجالاماق *ulja-la-maq* (v. tr.) to plunder, to loot.
 اولچاشماق *ülcha-'sh-mak* (v. recip.) to weigh one-another.
 اولچاک *ülcha'k* (subs.) a balance, scales, any weighing instrument.
 اولچاماک *ülcha-mak* (v. tr.) to weigh.
 اولغايتماق *ulgh-ai-'t-maq* (v. caus.) to cause to become greater, to cause to increase. [*ulugh*.]
 اولغيتماق *ulgh-ai-maq* (v. intr.) to become greater, to increase [from
 اولغى *awwal-ghi* (adj.) the first, the foremost, A. T.
 اولقى *awwal-qi* (the same).
 اولكا *ülka* (subs.) territory, region, district.
 اولكان *ülkan* (adj.) great, large, Kaz.
 اولگورماک *ülgür-mak* (v. intr.) to come or go forward, to advance
 (? for *ilgar'-mak*).
 اولگى *awwal-gi* (adj.) the first.
 اولماق (rare, probably borrowed from the West) for بولماق
 اولماک *äl-mak* (v. intr.) to die.
 اولوس *ulus* (subs.) a tribe, a division of a tribe (chiefly of nomads).
Almost obsolete.
 اولوش كۈن *ül-ush kön* (adv.) the day before yesterday, the other day.

- اولوش *ülüşh* (subs.) a portion, a share.
 اولوشماق *ülüşh-mâq* (v. tr.) to separate into parties.
 اولوغ *ulugh* (adj.) great, large, grand; *also* eldest, elder.
 اولوغراق *ulugh-râq* (adj.) greater.
 اولوغلاماق *ulugh-la-mâq* (v. tr.) to enlarge, to confer grandeur.
 اولوک *ül-ük* (subs.) a dead man or beast, a corpse, a carcass.
 اولوم *ül-üm* (subs.) death; (adj.) past, expired.
 اوماچ *umach* (subs.) a kind of semolina made of flour and eaten
 with soup.
 اومرۇتقا *umrutqa* (subs.) the back-bone, KAZ.
 اون *un* (num.) ten. *Also* for *und*, which see.
 اون *ân* (subs.) a voice, a sound.
 اوناتماق *una-'t-mâq* (v. caus.) to cause to agree.
 اوناشماق *una-'sh-mâq* (v. recip.) to agree together (in any matter).
 اوناماق *una-mâq* (v. tr.) to agree, to consent.
 اوند *und* (subs.) flour.
 اوندا *un-da* (pron. and adv.) *lit.* in that (place or time), *i. e.*, there,
 then. [cry]
 اوندا-ماق *ûnda-mak* (v. tr.) to summon with the voice (without out-
 اوندور-ماق *un-dur-mak* (v. caus.) to cause to sprout.
 اونگ *ung* (adj.) right (hand); *also* right, proper.
 اونگالتماق *ungal-'t-mâq* (v. caus.) to cause to improve, to cause to
 become better (any work, &c.).
 اونگالماق *ungal-mâq* (v. intr.) to improve, to become better.
 اونگاي *ungai* (adj.) easy.
 اونماق *un-mak* (v. intr.) to sprout, to shoot out from the ground.
 اونوتقاق *unut-qâq* (adj.) one who makes frequent mistakes, or
 omissions.
 اونوتماق *unut-mâq* (v. tr.) to make a mistake, to forget.
 اوي *ûi* (subs.) house, chamber. [and *met*).
 آوي *ûi* 1. (subs.) idea, thought; 2. (adj.) deep, profound (*lit.*
 آوي *uwi* (subs.) a bullock, an ox.
 اوييا *uya* (subs.) a nest, or sleeping place of an animal.

- اويات *uyat* (subs.) shame, modesty.
 اوياتسىز *uyat-siz* (adj.) shameless.
 اوياتماق *uyat-maq* (v. intr.) to feel shame.
 اويالماق *uya'l-maq* (v. pass.) to be put to shame, to be ashamed.
 اويانماق *uya-'n-maq* (v. intr.) to awake.
 اويرولماك *uyer-ul-mak* (v. pass.) to be turned, KAZ.
 اويروماك } (v. tr.) to turn, KAZ. for اويرماك, (which see).
 اويرووماك }
 اويغانماق *uigha-'t-maq* (v. caus.) to cause to awake, to awaken.
 اويغان *uighaq* (adj.) awake; also wide-awake, sharp, acute.
 اويغانماق *uigha-'n-maq* (v. intr. or refl.) to be awake. [? from *ui* "thought": thus—*ui-gha-maq* (if there were such a verb) would be "to be conscious," and the Reflective *uigha-'n-maq* would be, literally, "to be conscious of one's self, i. e. to be awake."]
 اويقو *uiqu* (subs.) sleep.
 اويقولتماق *uiqu-la-'t-maq* (v. caus.) to cause to sleep, to put to sleep.
 اويقولاشماق *uiqu-la-'sh-maq* (v. recip.) to sleep in company.
 اويقولماق *uiqu-la-maq* (v. intr.) to sleep.
 اويقولولوق *uiqu-luq* (adj.) drowsy after sleep.
 اويلاتماق *ui-la-'t-maq* (v. caus.) to cause to think.
 اويلاشماق *ui-la-'sh-maq* (v. recip.) to think together.
 اويلاماق *ui-la-maq* (v. tr.) to think, to reflect.
 اويلاماك *ui-la-mak* (v. tr.) to marry or cause to marry, to set up in life (said of the father or guardian) [lit. to make a *householder* of. From *ui* = house.]
 اويلا نماك *ui-la-'n-mak* (v. pass. or refl.) to be married, or started in life.
 اويما *öima* (subs.) an ornamental work done by cutting out a pattern and fixing it on another ground.
 اويماق *öimaq* (subs.) a thimble.
 اويماق *üi-maq* (v. tr.) to excavate (? from *üi* = deep).
 اويناتماق *öina-'t-maq* (v. caus.) to cause to play.
 اويناش *öinash* (subs.) a lover, KAZ.
 اويناشماق *öina-'sh-maq* (v. recip.) to play with one-another.

- اوينماق *öina-mâq* (v. intr.) to play. (Probably for *öyun-a-mâq*).
 اويوتماق *uyu-'t-mâq* (v. caus.) to cause to curdle.
 اويوماق *uyu-mâq* (v. intr.) to curdle, become curdled.
 اويون *öyun* (subs.) play.
 اوينچي *öyun-chi* (subs.) a player.
 اي *é* (interj. used in addressing a person).
 آي *ái* (subs.) moon, month.
 آي پالتو *ái-pàltu* (subs.) a battle-axe (? from its crescent shape).
 آياشماق *àya-'sh-mâq* (v. recip.) to grudge one-another.
 آياغ *áyagh* (subs.) leg, foot.
 آياغلاشماق *áyagh-la-'sh-mâq* (v. recip.) to lie head and feet together
 (like herrings in a barrel) ; to lie with all the feet in-
 wards to the fire.
 آياغلاماق *áyagh-la-mâq* (v. tr.) to wade (on foot) across a river.
 آيات *áyâq* (subs.) a bowl (of wood or earthen ware, &c).
 آيات *áyâq* for آياغ.
 آياتچي *áyâq-chi* (subs.) a cup-bearer, one who fills the bowl.
 آياماق *aya-mâq* (v. tr.) to withhold, to withdraw (anything), to
 grudge (anyone anything).
 آيانماق *aya-'n-mâq* (v. refl.) to withdraw one's self from, to flinch,
 to shirk, to shrink from.
 آياك *iyâk* (subs.) chin, KAZ.
 آيبارتماق *ibâr-'t-mâk* (v. cause.) to cause to send.
 آيبارتتورماق *ibâr-'t-tur-mâk* (v. cause. redupl.) to cause to have (some-
 thing) sent, to cause to cause to send.
 آيبارماق *ibâr-mâk* (v. tr.) to send.
 آيبريق *ibriq* (subs.) an earthenware water-jug.
 آيپاك *ipâk* (subs.) silk.
 آيپلاشتورماق *ipla-'sh-tur-mâk* (v. recip. caus.) to cause to take their
 proper places, to put into the proper order among them-
 selves, or mutually.
 آيپلاشماق *ipla-'sh-mâk* (v. recip.) to get into one's proper places, to
 arrange one's selves or themselves.
 آيپلاماق *ipla-mâk* (v. tr.) to arrange in proper order or sequence.
 آيت *ît* (subs.) a dog.

- ایتاك *itak* (subs.) a skirt, lower edge. [*dersoni* (?)
- ایتالگو *italgū* (subs.) the female of the *Shungkár* or *Falco Hen-*
- ایتیش *it-tish* (subs.) *lit.* dog-tooth; a kind of stitch in which the needle is passed through alternately from opposite sides [? herring bone].
- ایتماک *it-mak* (v. tr.) 1. to make, to build; 2. to shut, fasten.
- آیتماک *ait-mak* (v. tr.) to speak, to say.
- ایتیلماک *it-il-mak* (v. pass.) 1. to be made; 2. to be fastened,
- آیتیلماک *ait-il-mak* (v. pass.) to be said.
- ایچ *ich* (subs.) inside, interior; *ich-i-da*=within.
- ایچاک *ichak* (subs.) entrails, Кн.
- ایچای *ichaï* (subs.) entrails.
- ایچره *ich-ra* see *ichkari*.
- ایچقور *ich-qur* (subs.) a waist band.
- ایچقیلیق *ich-qi-liq* (subs.)
- ایچکاری *ich-k'ari* (adv. and p. p.) inside. See *Gram.*, p. 65.
- ایچکو *ichkü* (subs.) goat.
- ایچماک *ich-mak* (v. tr.) to drink. [saddle.
- ایچمک *ichmak* (subs.) a saddle pad, a piece of felt going under the
- ایچورماک *ich-ur-mak* (v. caus.) to cause to drink, to give to drink.
- ایدا-تماک *aïda-'t-mak* (v. caus.) to cause to drive away.
- ایداشماک *aïda-'ah-mak* (v. recip.) to drive away in company.
- ایداماک *aïda-mak* (v. tr.) to drive away [the same as *haïda-mak*].
- ایدی 1. *aïdi*, corr. from *aït-ti* "he said"; 2. *idi*, contr. from *irdi* "he was."
- ایر *er* (subs.) a male, a man, a husband; *also*, a hero, a brave man.
- ایراق *irâq* (adj.) far, distant.
- آیران *aïran* (subs.) butter-milk.
- ایرانلار *er-ânlar* (subs.) heroes, men of worth [from *er* and (?) double Plural, P. and T., as a mark of respect].
- ایرنماق *ert-mâq* (v. tr.) to get the better of, to deceive (P for *ârtmâq*, qu. "to come over" vulg.)
- ایرتہ *erta* (subs.) morning; (adv.) to-morrow.

ايرته‌گي *orta-gi* 1. (subs.) a tale, a history; 2. (adj.) belonging to the morning.

ايرجايتماق *irjai-t-mâq* (v. caus.) to cause to grin.

ايرجايتاق *irjai-mâq* (v. intr.) to laugh foolishly, to simper, to grin.

ايردي *irdi* (part of def. verb subs.) usually contracted to *idi* [which see] "he was."

ايرسه *irsa* (Pot. Part. of def. verb subs., prd. also *isa*) "may be."

ايرشتورماق *irsh-tur-mak* (v. caus.) to cause to arrive up.

ايرشماق *irsh-mak* (v. intr.) to arrive up, to arrive after.

ايرغاتماق *irgha-t-mâq* (v. caus.) *lit.* to cause to swing; [usually] to shove, push or shake.

ايرغانماق *irgha-'n-mâq* (v. refl.) to swing or move one's self.

ايرغوتماق *irghu-t-mâq* (v. caus.) to cause to leap over. [lation.

ايرغوشماق *irghu-'sh-mâq* (v. coll.) to leap together, to leap in emu-

ايرغوماق *irghu-mâq* (v. tr.) to leap over, to jump.

ايركا *irka* (adj.) pet, favourite.

ايرگاش *ir-gash* (vl. adj.) having been (from *ir-mak*).

ايرگاشتورماق *irgash-tur-mak* (v. caus.) to cause to follow.

ايرگاشماق *irgash-mak* (v. tr.) to follow of one's own accord; to join or attach one's self to.

ايركاك *erkak* (adj.) male.

ايركالاتماق *irka-la-t-mak* (v. caus.) to cause to favour.

ايركلاشماق *irka-la-'sh-mak* (v. recip.) to favour one another.

ايركالاмаق *irka-la-mak* (v. tr.) to pet, to favour [see *irka*].

ايركالانماق *irka-la-'n-mak* (v. pass.) to be petted, or favoured.

ايركان *irkan* or ايكان *ikan* (Indef. Part. of defect. verb subs. *irmak*) *lit.* "being", "having been". Commonly used for the copula "is". Gives a dubitative sense when joined to other verbs. See Grammar.

ايركته *erakta* (subs.) husband.

ايركيت *erkit* (subs.) sour butter-milk.

ايركيلماق *irk-il-mak* (v. pass.) to be strained [as any watery stuff through a cloth].

- ایرکین *irkin* or ایکین *ikin* same as *irkan*.
 ایرکین *irkin* (adj.) wide, broad, extended.
 ایرکینلاشماک *irkin-la-'sh-mak* (v. recip.) to be reciprocally at ease ; to have room between one another.
 ایرکینلاماک *irkin-la-mak* (v. intr.) to be at ease, not tightened for space ; to have room.
 ایرماس *ir-mas* (Neg. form of *irur*, the Continuative Part. of defective verb subs.) pronounced usually *imas*, "not being," "is not."
 آیرماق *air-mâq* (v. tr.) to divide, to separate.
 ایرماک *irmak* (Infinitive of the defective verb substantive, not common in this form,) to be.
 ایرماک *irmak* (subs.) any trifling occupation.
 ایرماکلاشماک *irmak-la-'sh-mak* (v. recip.) to trifle with one another.
 ایرماکلاماک *irmak-la-mak* (v. intr.) to trifle.
 ایرور *ir-ur* (Continuative Part. of *ir-mak*, not common) being ; also is.
 ایرون *irün* (subs.) lip.
 ایرونماک *irün-mak* (v. tr.) to dislike doing (? to put up one's *lip* at), to procrastinate.
 ایرونوشماک *irün-üşh-kak* (adj.) procrastinating habitually.
 ایرونوشماک *irün-üşh-mak* (v. coll.) to procrastinate together.
 آیری *airi* (subs.) a pitch-fork.
 ایریتماک *iri-t-mak* (v. caus.) to melt (trans.) [lit. "to cause to be in a melted state" from *iri-mak*]. [mak].
 ایریشتورماک *irish-tur-mak* (v. caus.) to cause to arrive up [from *irish-*
 ایریشماک *irish-mak* (v. intr.) 1. to arrive up, [same as *irsh-mak*]; 2. to melt together [recip. form of *iri-mak*].
 ایریکلاماک *irik-la-mak* (v. tr.) to sort out or select the largest. [nuyer].
 ایریکماک *irik-mak* (v. intr.) to be weary (not with hard work), "s'en-
 آیریلماق *air-il-mâq* (v. pass.) to be divided [from *air-mâq*].
 ایریلیش *air-il-ish* (vl. subs.) divarication, place where waters &c. separate into several channels or courses. [another.
 آیریلیشماق *air-il-ish-mâq* (v. pass. recip.) to be divided from one

- ایریماک *iri-mak* (v. intr.) to melt, to become melted.
- ایریمچیک *irimchik* (subs.) cream-cheese.
- ایرین *irin* (subs.) lip.
- ایریمچاک *irin-chak* (adj.) procrastinating, lazy. [mak].
- ایرینمک *irin-mak* (v. intr.) to be lazy, to procrastinate (see *irün-*
- ایز *iz* (subs.) track, trace, foot-track.
- ایزغورماق *iz-ghur-maq* (v. intr.) to whistle.
- ایزگو *izgu* (adj.) good.
- ایزگرلیک *izgu-lik* (subs.) goodness.
- ایزلاماک *iz-la-mak* (v. tr.) to track, to follow the traces.
- ایزما *izma* (adj.) talkative, KH.
- ایزماک *izmak* (subs.) braid, edging (of robes).
- ایزماک *iz-mak* (v. tr.) to rub up in water, to dissolve (tr.).
- ایزا *iza* (subs.) reproof, molestation, P.
- ایزلتماک *izla-t-mak* (v. caus.) to cause to search.
- ایزلشماک *izla-'sh-mak* (v. recip.) to search in company.
- ایزلاماک *izla-mak* (v. tr.) to search.
- ایزلیماک *iz-il-mak* 1. (v. pass.) to be dissolved as in water; 2. (v. intr.) to gossip, to chatter (see *izma*).
- ایس *is* (subs.) smell, aroma; also the sickness &c., caused by rarity of the air at high elevations; memory, recollection, understanding. [smoke.
- ایس *is* (subs.) grime, the dirt formed on walls, &c., by
- ایسان *isan* (adj.) safe, well, KAZ. KH.
- ایسانلاشماک *isan-la-'sh-mak* (v. recip.) to ask mutually after one another's welfare.
- ایسانلیک *isan-lik* (subs.) safety, welfare.
- ایستتماک *ista-t-mak* (v. caus.) to cause to search.
- ایستاشماک *ista-'sh-mak* (v. recip.) to search together.
- ایستماک *ista-mak* (v. tr.) to search for.
- ایسکانماک *iska-t-mak* (v. caus.) to cause to smell.
- ایسکشماک *iska-'sh-mak* (v. recip.) to smell (tr.) together.
- ایسکاک *iskak* (subs.) a pair of tweezers.

- ایسکاماک *iska-mak* (v. tr.) to smell, to snuff.
- آیسلاماق *(üs) is-la-maq* (v. tr.) to make grimy with smoke.
- ایسلاماک *is-la-mak* (v. intr.) to suffer from the rarity of the air.
- ایسلاناک *is-la-'n-mak* (v. refl.) to smell (intr.), to give out an odour.
- آیسلاناق *(üs) is-la-'n-maq* (v. pass.) to be made grimy with smoke ; to become grimy.
- ایسیتما *isit-ma* (subs.) fever, feverishness.
- ایسیتاق *isi-t-maq* (v. caus.) to cause to be hot, to heat. (From primitive *isi-mák* of *issik* "hot.")
- ایسارغە *isargha* (subs.) ear-ring.
- ایسارماک *isar-mak* (v. intr.) to become drunk, tipsy.
- ایساروک *isaruk* (adj.) drunken, tipsy.
- ایسکی *iski* (adj.) old, worn out, КН., КАЗ. ; and thence, "bad" (in which meaning chiefly it is used in Eastern Turkistán).
- ایسلیک *is-lik* (adj.) intelligent, sharp [from *is*].
- ایش *ish* (subs.) work, labour, deed, business.
- ایش *ish* (subs.) a companion, comrade. (Possibly the origin of the verbal affix of reciprocity "*ish*.")
- ایشاک *eshak* (subs.) donkey, ass.
- ایشاک مونجاق *eshak-munjâq* (subs.) common glass beads [lit. "donkey beads," i. e. second-rate ones. Conf. "donkey-engine"].
- ایشان *eshân* (subs.) a title applied in Turkistán to religious teachers [? the P. *eshân* = "they;" the Pl. being used as a mark of respect ; or else from following series].
- ایشانچی *ishân-ji* (subs.) a confidential person, one in whom confidence is felt.
- ایشاندورماق *ishân-dur-maq* (v. caus.) to cause to put confidence in, to cause to believe.
- ایشانماق *ishân-maq* (v. tr.) to put confidence in, to believe, КН., КАЗ.
- ایشیتмак *ishit-mak* (v. tr.) to hear.
- ایشیتورماк *ishit-tur-mak* (v. caus.) to cause to hear, to relate.
- ایشکاک *ishkak* (subs.) a paddle [from *ishmak*].
- ایشک *ishik* (subs.) a door, a gate.
- ایشلاتмак *ish-la-t-mak* (v. caus.) to cause to work.

ایشلاماک *ish-la-mak* (v. tr.) to work [from *ish*].

ایشقار *ish-qar* (subs.) potash.

ایشقیریشماق *ishqir-ish-maq* (v. recip.) to whistle to one another.

ایشقیرماق *ishqir-maq* (v. intr.) to whistle.

ایشکالی *ishkali* (subs.) a horse hobble.

ایشماک *ish-mak* (v. tr.) 1. to twist or plait ; 2. to paddle.

ایشیتماک *ishit-mak* (v. tr.) to hear.

ایشیلماک *ishil-mak* (v. pass.) 1. to be heard ; also 2. [*ish-il-mak*] to be twisted, or to be plaited.

آیغور *aighur* (subs.) an entire horse, a stallion.

ایکاک *ikak* (subs.) a file (instrument for filing).

ایکان *ikan* (Indefinite Part. of defective verb (*i(r)mak*) "being or having been", used as copula "is."

ایکار *ikao* (num. subs.) both.

ایکارلان *ikaolan* (num. subs.) both.

ایکایلان *ikaïlan* (num. subs.) both.

ایکی *iké* (num.) two.

ایکیدین *iké-din* (adv. expr.) by twos [*bir-din iké-din* = by ones and twos].

ایکینچی 1. *iki-'nchi* (num. adj.) second ; 2. *ikin-chi* (subs.) a cultivator [see *ikin*].

ایکین 1. (part.) see *ikan* ; 2. (subs.) a young crop.

ایکین بیرین *ikin birin* (adv. expr.) by twos and ones.

ایگا *iga* (subs.) master, owner, also husband.

ایگاچی *iga-chi* (subs.) elder sister.

ایگار *igar* (subs.) saddle.

ایگاک *igak* (subs.) a file.

[own.

ایگالاماک *iga-la-mak* (v. tr.) to become master of, to rule or govern, to

ایگالانماک *iga-la-'n-mak* (v. refl.) to make one's self master of ; also (spec.) to frequent, to haunt.

ایگار *igao* (subs.) a file.

ایگماک *ig-mak* (v. tr.) to bend.

ایگنه *igna* (subs.) a needle.

- ایگیرماک *igir-mak* (v. tr.) to spin.
- ایگیر *igiz* (adj.) high, tall ; *also* deep.
- ایگیرین *igin* (subs.) a young crop [see *ikin*].
- ایگیرین *igin* (subs.) clothes, clothing.
- ایگیرچی *igin-chi* (subs.) a cultivator [see 1st *igin*].
- ایگیلماک *ig-il-mak* (v. pass.) to be bent.
- ایل *il*, 1. (subs.) a country (vide *Roum-elia*=The country of Roum) ; 2. (adj.) allied, in alliance.
- آیل *ail* (subs.) a girth.
- آیلا *aila* (subs.) elder sister ; *also* an old woman.
- ایلات *ildat* (subs.) any nomad tribe.
- ایلاتماک *ila-t-mak* (v. caus.) to cause to sift.
- ایلاشماک *ila-sh-mak* (v. recip.) to sift in company [also used in Yarkand for *irgash-mak*].
- ایلاماک *ila-mak* (v. tr.) 1. to sift, to pass through a sieve ; 2. to mix dough ; 3. to tan (leather).
- آیلاماک *aila-mak* (v. tr.) to make, to do.
- ایلان *ilan* (subs.) a serpent, a snake.
- آیلاندرماک *ailan-dur-mak* (v. caus.) to cause to turn.
- آیلانماک *ailan-mak* (v. intr.) to turn (of itself), to be turned.
- آیلانوشماک *ailan-ush-mak* (v. recip.) to turn together.
- ایتماک *ilt-mak* (v. tr.) to take away (chiefly used in comp. as *iltip birmak* "to take away and give)."
- ایلتماک *ilt-mak* (v. intr.) to become dizzy through smoking, &c.
- ایلچی *il-chi* (subs.) an Ambassador, a negotiator [from *il* "allied"] ; *also* (prop. name) the capital of Khotan.
- ایلدام *ildam* (adv.) quickly.
- ایلغاتماک *ilgha-'t-maq* (v. caus.) to cause to sort.
- ایلغار *il-ghar* (subs.) a frontier station of troops, an advanced guard, a raid.
- ایلغاشماک *ilgha-'sh-maq* (v. recip.) to sort together.
- ایلغاماق *il-gha-maq* (v. tr.) to sort by hand, to pick out, to search, to investigate ; (intr.) to advance, to attack, to make a raid.

- ایلغانماق *ilgha-'n-maq* (v. refl.) to sort themselves.
- ایلّقي *ilqi* (subs.) a troop of horses, a stud.
- ایلقچي *ilq-chi* (subs.) a guardian of a troop of horses.
- ایلاشتورماک *il-la-'sh-tur-mak* (v. recip. caus.) to cause alliance between, to mediate.
- ایلاشاك *il-la-'sh-mak* (v. recip.) to enter into alliance together [from *il* "allied"].
- ایلق *iliq* (adj.) warm.
- ایلگاري *il-gari* (adv. and p. p.) in front, formerly; also, before (governs negative).
- ایلماک *il-mak* (v. tr.) to hang up (as on a peg), to hitch into.
- ایلمه *ilma* (subs.) a particular stitch, "chain-stitch."
- ایلیک *ilik* (subs.) 1. a hand [unusual in Yarkand]; 2. marrow.
- ایلیک بولماق *ilik bol-maq* (comp. verb) to go security.
- ایللیک *illik* (num.) fifty [? conn. with *ilik* "hand"].
- ایلینماک *il-in-mak* (v. pass.) to be hung up.
- ایماس *imas* (part of defective verb subs.) "is not" [for *ir-mas*].
- آیماق *aimaq* (subs.) a tribe, the descendants of a particular person; also (prop. n.) a tribe near Herát.
- ایمانماک *imán-mak* (v. intr.) to be respectful, to show respect.
- ایمچاک *imchak* (subs.) a woman's breast.
- ایمچاكداش *imchak-dash* (subs.) a foster brother or sister [lit. breast companion].
- ایمچي *im-chi* (subs.) an empiric, a quack.
- ایمدی *im-di* (conj.) now.
- ایمگاک *im-gak* (verb. subs.) excessive labour and weariness consequent thereon, trouble, difficulty [from obs. prim. *im-ga-mak*].
- ایمگانماک *im-ga-'n-mak* (v. refl.) to be wearied with excessive labour of any kind.
- ایملاتماک *im-la-t-mak* (v. caus.) to cause to treat empirically.
- ایملاشماک *im-la-'sh-mak* (v. recip.) to make signals to one-another by nodding or winking. [doctor.
- ایملاماک *im-la-mak* (v. tr.) to treat empirically, to act as a quack

ایلاماک *im-la-mak* (v. tr.) to make signs by nodding or winking to any-one.

ایمماک *im-mak* (v. tr.) to suck [the breast, as an infant].

ایموکداهش *im-uk-dash* (subs.) a foster brother or sister.

ایمیزماک *im-iz-mak* (v. caus.) to cause to suck, to give an infant the breast. [infant.]

ایمیزوک *im-iz-uk* (subs.) a contrivance for artificially feeding an

ایمیش *imish* [part of defective verb subs.] "it is understood to be."

ایمشماک *im-ish-mak* (v. recip.) to suck together from the same breast [of foster brothers, &c.].

این *in* (subs.) width, breadth.

اینا *ina* (subs.) mother, KAZ.

اینا *ina* (subs.) needle, KAZ.

اینات *indq* (subs.) a confidential servant.

آیناک *anak* (subs.) a cow.

اینکه *inaga* (subs.) a nurse (of children).

اینانماک *inan-maq* (v. intr.) to believe, to trust [governs *gha*].

اینچی *inji* (subs.) a pearl.

اینجیگه *injiga* (adj.) fine (as opposed to coarse).

اینداشماک *inda-sh-mak* (v. recip.) to beckon to one another.

اینداماک *inda-mak* (v. tr.) to beckon, to summon.

آینک *ainak* (subs.) eye-glass, spectacles, P.

اینگاک *ingak* (subs.) chin.

اینگان *ingan* (subs.) a female camel.

آینوتماک *äinu-t-maq* (v. caus.) 1. to cause to fade, &c. ; 2. to cause to become sober.

آینوشماک *äinu-sh-maq* (v. recip.) 1. to fade, &c. together ; 2. to become sober together.

آینوماک *äinu-maq* (v. intr.) to fade, to lose colour or flavour.

آینوماک *äinu-maq* (v. intr.) to become sober.

اینی *ini* (subs.) a younger brother, KH.

آیوان *aiwan* (subs.) a veranda, a colonnade, P.

آیو *ayu* (subs.) a bear, KAZ.

آیغ *ayigh* *ayiq* (subs.) a bear.

- اييك *iyik* (subs.) a distaff.
 اييماك *iyi-mak* (v. intr.) to become soft, to relax (as a man's wrath, or the udders of a cow when the calf is put to her previous to milking) KAZ.

ب

- بابا *bābā* (subs.) father, or grandfather (used in the former sense chiefly by children, like our "papa").
 باباق *bābāq* (subs.) father or grandfather; also child. [trate.
 باتماق *bāt-māq* (v. intr.) to sink (as the feet in mud); also to penetrate.
 باتور *bātur* (subs. and adj.) a brave man; brave [corr. of "bahādur," P.].
 باتوق *bātūq* (subs. and adj.) ground where the feet sink, a quagmire (applied also to deep sand).
 باجا *bāja* (subs.) the husband of one's wife's sister.
 باخشاشماق *bakhsh-la-'sh-māq* (v. recip.) to give to one another, P. T.
 باخشلاماق *bakhsh-la-māq* (v. tr.) to give, to grant, to forgive, P. T.
 باخشي *bakhshi* (subs.) a strolling minstrel, an inspired bard (pretending to receive inspiration from supernatural beings); also a hunter.
 بار *bār* prd. generally *bā* (subs.) existence, being, presence, (cf. Germ. *dasein*); also that which exists; (adj.) existent, being, present. *When apparently used as a verb it may be translated "there is"* (Germ. *es gibt*). Thus *hàkim bār* = 'there is a Governor' (a Governor exists), whereas *hàkim dur* or *hàkim ikan* would be "(he) is Governor."* *Bār* is an attribute in itself; *dur* or *ikan*

* There is the same distinction in the Tibetan and Burmese languages. In the former *yod-pa* or *dug-pa* means "to exist," "to be found at a place," while *zin-pa* is the mere means of connecting the attribute with its subject [Jaeschke's Tibetan Gram. § 89]. Again in Burmese *shi-thi* is the real verb substantive denoting concrete existence, while *'pyi(s)-thi* is a copula denoting connection of some sort between a subject and an attribute: thus *myiñ shi-thi* = "there is a horse," while *myiñ 'pyi(s)-thi* = "(it) is a horse."

is the mere means of connecting a subject with an attribute. [*Bâr* is never really a verb, although it might appear so from certain uses of it. E. g. *ât bâr* would be translated "there is a horse;" but in reality this is a phrase in the common Turki form, like *ât chung* "the horse (is) big"—where the copula is wanting. Thus *ât bâr* is literally "the horse (is) existent." *Bâr* is never a copula, being itself an attribute. And it does not contain the copula, any more than any other adjective used in a similar way. The copula is *sous-entendu*. The use of *bâr* for our verb "to have" is another case of the above; e. g. *maning ât-im bâr* = "my horse (is) existent," i. e. I have a horse. Here "my horse" is the subject and "existence" is the attribute; and there is no verb expressed. The subject and attribute are merely connected by collocation as in other cases. Even with pronouns and seeming auxiliary verbs, *bâr* is merely an adjective: e. g. *bâr-man* "I (am) existent" is like *kichik man* "I (am) small"; *shèkh bâr idi* "a shèkh was existent" is like *shèkh pîr idi* "the shèkh was old" (in the Past tense the copula of that tense is introduced, in both cases). Thus it is merely as a *memoria technica* that *bâr* can be said to correspond with the English "there is." It really corresponds better with the "there" of that expression. Its use as an unmistakable substantive or adjective requires no explanation: e. g. *bâr-i-ni tutti* "what-there-was of-his he took;" *âhl-im bâr üi* "the house where my wife is present" (an elliptical expression).

These remarks may be generalised. What *bâr* still is, all Turki verbs seem formerly to have been, and even now are in their essence. Unlike *bâr* they are affected by certain agglutinated syllables which make of them separate substantives or adjectives connected with different tenses or modes of action &c. But like *bâr*

they all require a copula to be understood. It might almost be said, paradox as it seems, that there are no verbs in Turki, only substantives and adjectives. At any rate in external form there is no difference between the application of a noun of action (or suffering, or condition) and any other attribute. Take as an example any verb-tense (so-called): e. g. *gelur-man*. This, as it stands, is "continuously-doing I," where a copula, mentally supplied, is necessary to make this signify "I (am) continuously doing." So with other tenses. But it may be thought that the auxiliaries which are sometimes used as copulæ, must be true verbs. On the contrary *dur* is an adjective meaning "continuously standing"; *ikan* is an adjective, "indefinitely being"; *irur* is a substantive or adjective "continuously doing"; *irdi* is a substantive in the possessed form of the 8d. pers. sing. (*ird-im*, *ird-ing*, *ird-i* are as regular substantive formations as *ât-im*, *ât-ing*, *ât-i* "my horse," "thy horse", "his horse", and mean literally "my past-being", "thy past-being", "his past-being"). In no part of the so-called verb do we find an expression which is itself a statement without requiring a copula to be mentally supplied; and no where do we find such a copula to supply in the last instance. It does not exist. Collocation is the only true copula in Turki. A so-called verb is only an attribute attached to a subject under the rules applicable to substantives and adjectives. The fact of its being an attribute of action, or suffering, or condition, makes its form of application differ in no way from that of any other substantive or adjective. *Urup-man* "I (have) struck (having-completed-striking I)" does not differ in form from *kichik man* "I (am) small", nor *qelghu'm-bâr* "I have to do (future-doing of-mine existent)" from *ât-im bâr* "I have a horse (horse of-mine existent)."]

بارچه *bâr-çah* (adv. and pron.) wholly, *also* all, the whole. (*Lit.* 'to the amount of what there is': from *bâr* wh. s., and *çah* "extent").

بارس *bárs* (subs.) an ounce, "white leopard" (so called).

بارغاق *barghâq* (subs.) a receipt or discharge in full given by the officials for Government demands which have been paid (in kind).

بارليق *bâr-liq* (subs.) existence, being; (also adj.) possessing property, [from *bâr*, see above].

بارماق *bâr-mâq* (v. intr.) to go.

بارماق *bârmâq* (subs.) a finger.

باش بارماق *bâsh-bârmâq* 'the head finger,' 'the thumb' (also *bâsh-maldag*); *eshak-qol*, lit. 'donkey hand,' the 1st finger; *otra-qol*, lit., middle hand, 'the middle finger'; *yân qol*, lit. side hand, 'the ring finger'; *chimchilak* 'the little finger.'

باستورما *basturma* (subs.) a shed.

باستورماق *bas-tur-mâq* (v. tr.) to cause to tread [see *bas-mâq*].

باستورۇق *bastur-uq* (verb. subs.) a pole tied across a loose load to keep it together by pressure [from *bas-tur-mâq*].

باسقان *basqan* (subs.) a sledge-hammer. [press'').

باسقون *basqun* (subs.) a night-mare, (connected with *bas-mâq* "to

باسما *basma* (adj.) impressed, stamped, printed; (subs.) printed calico, print.

باسماق *bas-mâq* (v. tr.) to press, impress, print, stamp; *also* to tread, to tread out (as corn).

باسورۇق *basuruq* (subs.) an instrument for using pressure [see *basturuq*], a press.

باسوق *bas-uq* (verb. adj.) oppressed, humble, meek, quiet.

باسيق *basiq*—the same.

باش *bâsh* (subs.) head, *also* chief, *also* the first.

باشه *bâsha* (subs.) a sparrow-hawk.

باشاق *bâshâq* (subs.) the iron point of an arrow.

- باشباق *básh-báq* (subs.) the halter for tying up a cow &c., [from *básh* and *bágh-la-máq*.] [break.]
- باشتوخى *básh-tukhi* (subs.) *lit.*, first cock, *i. e.* cock-crow, day-
- باشچى *básh-chi* (subs.) a leader or guide.
- باشقا *báshqa* (adj.) separate, other.
- باشلانماق *básh-la't-máq* (v. caus.) to cause to precede, guide.
- باشلاماق *básh-la-máq* (v. tr.) to precede, guide; *also* to renew.
- باشلانماق *básh-la'n-máq* (v. refl.) to guide one's self.
- باشلغىن *báshlighin* (adv.) leading, first.
- باشمە الداق *básh-maldáq* (subs.) the thumb, the chief finger.
- باشىق *báshuq* same as *básháq*.
- باشى *báshi* [used in comp. to mean "a chief;" originally the possessed form 3rd person, from *básh*, *e. g.* *yüz-báshi* for *yüz-ning básh-i*, *lit.* the head of a hundred].
- باغ *bágh* (subs.) a garden, P.; *also* a bundle of hay (or straw).
- باغچه *bágh-chah* (subs.) a little garden, P. T.
- باغلانماق *bágh-la't-máq* (v. caus.) to cause to bind.
- باغلاشماق *bágh-la'sh-máq* (v. recip.) to bind one-another, *or* to bind in company.
- باغلاغلىق *bágh-la'gh-liq* (verb. adj.) bound, in a bound condition.
- باغلاماق *bágh-la-máq* (v. tr.) to bind.
- باغلىق *bágh-liq* (subs.) wisp or rope with which a bundle or sheaf is bound.
- باغىر *bághir* (subs.) liver (of an animal).
- باغىش *bághish* (subs.) a joint or articulation.
- باغىش لاماق *baghish-la-máq* (v. tr.) to give, to grant, to forgive [corr. from *bakhsh*, P.].
- باق *báq* the same as *bágh*.
- باتا *báqá* (subs.) a frog.
- باتاچاناق *báqa-chanáq* (subs.) a tortoise [*lit.* "a frog in a hole" from *chanáq* = a hole].
- باقال *baqqál* (subs.) a grocer, green-grocer, seller of uncooked provisions. A.

- باقالچاق *baqálehâq* (subs.) the pastern bones of a cow or sheep.
- باقدرماق *baq-tur-mâq* (v. caus.) to cause to look, to show.
- باقچا *bâqcha* (subs.) the same as *bâgh-cha*.
- باقماق *bâq-mâq* (v. tr.) to look, to inspect, to look after or take care of ; to perceive with any of the senses.
- باقیشماق *bâq-ish-mâq* (v. recip.) to look at one another, to look at or after (in company).
- باقین *bâqin* (adj.) being fattened [corr. from *bâqqàn* "which is looked after"] *used of a sheep, &c. ; also dependent (of a man).*
- باکارل *bakâul* (subs.) a cook.
- بالا *bâla* (subs.) a child, or the young of an animal.
- بالا بارقه *bâla-barqa* (subs.) children, family (including the women of a household). Cf. Hind. *bâl-bacha*.
- بالاق *bâlâq* (subs.) the lower part (below the knee) of trousers.
- بالالاماق *bâla-la-mâq* (v. tr.) to bring forth young.
- بالچىق *bâlchiq* (subs.) mud.
- بالداق *bâldâq* (subs.) a mace or truncheon with a wrist-strap.
- بالقا *bâlqa* (subs.) a hammer.
- بالدير *bâldir* (adv.) before, first, formerly.
- باي *bai* (subs. and adj.) a rich man, a merchant ; *also rich, wealthy.*
- بايا *bâya* (adv.) just now, lately.
- باياغى *bâyaghi* } (adj.) early, former.
باياتى *bâyayi* }
- باي بچه *bâi-bachah* (subs.) the son of a rich man, a person of independent means, T. P.
- باي بيچه *bâi-bichah* (subs.) the chief wife, the first wife, KAZ.
- بايتال *baïtal* (subs.) a mare over four years of age which has not had a foal.
- بايرىق *bâirak* (subs.) the standard of a *yüzbaşî* or centurion.
- بايرى *bairi* (subs.) a square of any stuff ; (piece-goods were formerly sold by the squares of their width).
- بايري *bâiri* (adj.) old, of long service (said of domesticated animals).

بايقوش *baï-qush* (subs.) an owl [as if "the rich or respectable bird" (*qush* = bird)], KAZ.

بايقيز *baï-qiz* (subs.) *the same as last*.

بايلاشماک *baï-la-'sh-mak* (v. recip.) *the same as baghlashmak*, KAZ.

بايلاماک *baï-la-mak* (v. tr.) *same as baghlamak*, KAZ.

بايلوق *bäi-luq* (subs.) rich-ness; *also KAZ. for bagh-liq*.

بايوتماق *baï-ut-maq* (v. caus.) to enrich, KAZ.

بايوماق *baï-u-maq* (v. intr.) to become rich, KAZ.

بحيل لاتماک *bahil-la't-mak* (v. caus.) to cause to remit or forgive, A. T.

بحيل لاشماک *bahil-la-'sh-mak* (v. recip.) to remit to one-another, A. T.

بحيل لاماک *bahil-la-mak* (v. tr.) to remit or forgive, A. T.

بحيل ليقي *bahil-liq* (subs.) forgiveness.

بر *bir* (num.) one.

برار *birar* (adv.) singly, one by one.

براو *birao* (subs.) a single one (as 'a pair' is said of two).

براو *burrao* (subs.) a gimlet, KAZ.

براولان *biraoalan* (subs.) a single one, KAZ.

برايلان *birailan* (subs.) a single one.

بربولماق *bir-bolmaq* (v. intr.) to become of one accord, *lit.* to become one. [place].

برگا *bir-gá* (adv.) together [probably from P. *gáh* = time or

برلا *birla* (post-pos.) with (see *birlan*).

برلاتماک *bir-la-t-mak* (v. caus.) to cause to become one, to unite.

برلان *birlan* (post-pos.) with; *also* by, through (a line or locality)

e. g. *Kāshqar yoli birlan* = by the Kāshghar road, *ichi*

birlan ütüp = having passed through the interior of it.

Also used as a conjunction for and: e. g., *át birlan át-*

lik = horse and rider; *shahr birlan tugh-ning ara-si-da*

= between the town and the hill, *lit.* in the middle (or

interval) of the town and (with) the hill. (Probably

contr. from *bir-ailan* = a single one, and so 'in one,'

'together.' See Gram. p. 70, N.B.).

برلانچي *bir-lanchi* (num. adj.) first, foremost, KAZ.

برلاشماک *bir-la-'sh-mak* (v. recip.) to become of one accord, together.

برنجی *bir-in-jî* (num. adj.) first, foremost.

برو *for* برو

بریکتورماک *bir-ik-tur-mak* (v. caus.) to cause to unite.

بریکشماک *bir-ik-ish-mak* (v. recip.) to unite together.

بریکماک *bir-ik-mak* (v. intr.) to become joined, to unite.

برین برین *bir-in bir-in* (adv.) by ones, singly.

برین ایکین *bir-in iki-'n* (adv.) by ones and twos.

بز *biz* (pron.) we.

بشارت (? for بشارت or for اشارت A.) *used to mean* a heavenly revelation or command conveyed in a vision.

بغلاماق *bagh-la-mâq* (v. tr.) to bind.

بوغرا *for* بوغرا

بلا *bûlla or billa* (adv.) together, in one.

بلازوک *bûlâzök* (subs.) a wrist [derived from *bûlak*, fore-arm, and *özök* = ring or hoop].

بلاک *bûlak* (subs.) fore-arm.

بلان *bûlân or bilân*, see *birlan*.

بلچیق *balchîq*, see بلچیق

بیلماک *bûlmak*, see بیلماک

بناگاه *ba-nâgâh* (adv. and conj.) suddenly, unawares, P. *but used for* if perchance.

بو *bû* (pron.) this (short form of *bûl*).

بوا *bûa* (subs.) an old man.

بوبا *bûba* (subs.) *the same*.

بوباگ *bûbak* (subs.) father, grandfather.

بوبي *bubi* (subs.) a lady [for *bibi*].

بوبيچه *bubicha* (subs.) *the same* [antiquated].

بوتا *bota* (subs.) a young camel.

بوتا *butta* (subs.) a small plant.

بودنه *bûdana* (subs.) a quail.

بودرشقاق *budushqâq* (subs.) a burr (which sticks in sheep's fleeces or woollen clothes).

بور *bur* (subs.) plaster, KAZ.

بورا *bora* (subs.) matting made of plaited reeds ; *also* woollen sacking, *from* P.

- بوراتماق *bura-t-mâq* (v. caus.) to cause (a person) to smell.
 بوراشماق *bura-'sh-mâq* (v. recip.) to smell in company.
 بوراغ *burâgh* (subs.) scent, odour, (from *bura-mâq*).
 بوراق *burâ'k*, the same.
 بوراك *bûrak* (subs.) kidney.
 بوراماق *bura-mâq* (v. tr.) to smell (used of the person who perceives the odour).
 بوراماق *bura mâq* (v. tr.) to wring.
 بوراماق *bora-mâq* (v. intr.) to blow or rage (as a storm).
 بوران *bordan* (subs.) a storm.
 بورداقي *burdâqi* (adj.) fattened, fed up.
 بورك *burk* (subs.) a small cap.
 بوركاشماق *burka-'sh-mak* (v. recip.) to cover or veil one-another, KAZ.
 بوركاشماق *burka-mak* (v. tr.) to veil, to muffle, to cover with a cloth, KAZ.
 بوركانماق *burka-'n-mak* (v. refl.) to veil one's self.
 بورگا *burga* (subs.) a flea. [poses].
 بورگوت *burgut* (subs.) the golden eagle [used for sporting purposes].
 بورنا *burna* (adv.) anciently.
 بورناغي *burnâghi* } (adj.) old, ancient.
 بورناقي *burnâqi* }
 بوروت *burut* (subs.) moustache.
 بوروشماق *burush-mak* (v. recip.) to pucker, to gather (together) [intr.]. From an imaginary or obsolete primitive *bur-mak* or *buru-mak*. [KAZ.]
 بوروق *buruq* (subs.) the root of a kind of reed sometimes eaten
 بوروق *bûruq* (subs.) command, order (corr. from *buyuruq*).
 بوروک *buru'k* (subs.) a pucker, a gather.
 بوروکماق *buruk-mak* (v. tr.) to blow water out of the mouth.
 بورون *burun* (subs.) nose. [preceding.]
 بورون *burun* (post-pos.) before, previous to. (See the next.)
 بورون *bûrun* (subs.) a surety, bail.
 بورى *bori* (subs.) a wolf.
 بوريا *borid* (subs.) reed-matting, P.

بوز *böz* (subs.) white cotton cloth.

بوز *bóz* (adj.) grey (used of animals, also of distance or dawn).

بوزا *boza* (subs.) a weak intoxicating liquor made from various grains, KH.

بوزاغ <i>buzàq̃h</i>	} (subs.) a calf (? conn. with <i>buz-la-máq</i>).
بوزاق <i>buzàq</i>	
بوزاك <i>buzak</i>	
بوزاو <i>buzao</i>	

بوزبوغا *boz-bug̃ha* (subs.) ginger, KAZ.

بوزبوغا *boz-buqa*, the same, KAZ.

بوزچي *böz-chi* (subs.) a weaver.

بوزغونج *buzghunj* (subs.) a gall-nut found on the pistachio tree, used in dyeing, as a mordant. [camels &c.).

بوزلاشماق *buz-la-'sh-máq* (v. recip.) to bellow in company (young

بوزلاماق *buz-la-máq* (v. intr.) to bellow (as a young camel &c.).

بوزمات *buz-máq* (v. tr.) to ruin, to destroy, to lay waste, to spoil.

بوزوق *buz-uq* (v. adj.) deserted, ruinous ; also abandoned or wicked.

بوزوقلوق *buz-uq-luq* (subs.) ruinousness, abandonment ; also a desert place.

بوزولماق *buz-ul-máq* (v. pass.) to be ruined, to be laid waste, to come to grief.

بوس *bus* (subs.) steam, also fog or mist.

بوساغ *bosaghah* (subs.) a threshold (for *bosa-gáh* "the place of kissing" P.).

بوسماک *bös-mak* (v. tr.) 1. to burst ; 2. to shovel along earth, &c. with the hands.

بوسورماق *bos-ur-máq* (v. tr.) to weight, to put a weight on anything to keep it down.

بوسوروق *bos-ur-uq* (subs.) anything used for weighting down.

بوسولماک *bös-öl-mak* (v. pass.) to be burst or split.

بوش *bósh* (adj.) empty ; also useless, vain (our "bosh").

بوشاتماق *bósh-a't-máq* (v. caus.) to cause to be empty, to empty.

بوشاشماق *bósh-a'sh-máq* (v. recip.) to empty together, also to 'dis-charge' a laborious task.

بوشاماق *bósh-a-máq* (v. intr.) to be empty, to have discharged a task or duty, to be tired.

بوشانماق *bósh-a'n-máq* (v. refl.) to make one's-self empty or free from a task, to acquit oneself, to discharge a duty.

بوشوك *bóshük* (subs.) a cradle (either rocking or swinging from the ceiling).

بوغ *búgh* (subs.) an earthenware trumpet used for giving notice that a mill is at leisure, or public baths are ready, P.

بوغ *bugh* (subs.) steam.

بوغاز *bughaz* (subs.) corn (considered as food for animals).

بوغاز *bughaz* (subs.) a throat, *also* the axis of an upper mill-stone where the orifice is.

بوغاز *bughaz* (adj.) pregnant.

بوغازلتماق *bughaz-la-'t-máq* (v. caus.) to cause to cut the throat.

بوغازلشماق *bughaz-la-'sh-máq* (v. recip.) to cut throats mutually, or in company.

بوغازلماق *bughaz-la-máq* (v. tr.) to cut the throat, "égorger."

بوغچي *búgh-chi* (subs.) a man who blows the *búgh*.

بوغداي *bughdaï* (subs.) wheat.

بوغدورماق *bugh-dur-máq* (v. caus.) to cause to seize by the throat.

بوغرا *búghra* (subs.) a male camel.

بوغماق *bugh-máq* (v. tr.) to throttle, to strangle, to constrict the throat of a bag, &c.

بوغو *bughü* (subs.) a stag (*Cervus Maral*).

بوغوز *bughuz*, *the same as* bughaz.

بوغوزلاماق *bughuz-la-máq*, *see* bughaz-la-máq.

بوغوشماق *bugh-ush-máq* (v. recip.) to throttle one another.

بوغولماق *bugh-ul-máq* (v. pass.) to be throttled *or* strangled; to have the throat constricted by anger (so as not to be able to speak).

بوغوم *bughum* (subs.) } a joint *or* articulation.

بوغون *bughun* (subs.) }

بوق *boq* (subs.) excrement.

بوقا *bugá* (subs.) a bull.

بوچھا *buqcha* (subs.) a bundle, any cloth used for wrapping up a bundle.

بوچماق *buq-máq* (v. intr.) to be concealed behind anything, to lie in ambush.

بوغو *buqu* (subs.) the wooden framework of a plough.

بوغووشماق *buq-ush-máq* (v. recip.) to conceal oneself one from another.

بوگونماق *buq-un-máq* (v. refl.) to conceal oneself.

بوك *buk* (subs.) a cap [contr. from *burk*].

بوكرایماق *bukuraï-mak* (v. intr.) to stoop, to bend.

بوكرماق *búkur-mak* (v. intr.) to moo as a cow.

بوكمال *búk-mak* (v. tr.) to soak any grain in water.

بوكماك *buk-mak* (v. tr.) to hem, to sew the edge.

بوگون *bú-gön* (adv.) to-day [from *bú* "this" and *kön* "day"].

بول *bul* (pron.) this.

[reconcile.

بولاشتورماق *bol-ash-tur-máq* (v. recip. caus.) to make peace between, to

بولاشماق *bol-ash-máq* (v. recip.) to be reconciled to one another

(? reciprocal form of *bol-máq*, see *bolushmàq*).

بولاك *búl-ak* (adj.) separate, other; (subs.) a division, a detachment [from *bul-mak*].

بولاكلاتاى *búl-ak-la-'t-mak* (v. caus.) to cause to separate.

بولاكلاشماق *búl-ak-la-'sh-mak* (v. recip.) to go asunder, to separate from one another.

بولاكلاماى *búl-ak-la-mak* (v. tr.) to divide, to separate, to disunite, to parcel out.

بولاق *buláq* (subs.) a spring of water.

بولاماق *bula-máq* (v. tr.) to stir up, to mix; also to rob.

بولاماك see بولاماك

[about."

بولامىق *bulámiq* (subs.) gruel, thick soup made with flour, "stir-

بولان *bulá'n* (v. subs.) robbery, pillage.

بولانچى *bulá-'n-chi* (subs.) a robber.

بولانماق *bulá'n-mak* (v. refl.) to separate oneself; also to support oneself, to rest upon (*iki ulugh tágh-gha bulanip dur-miz* = "We rest upon two mighty mountains").

بولاي *bülai* (subs.) a whet-stone and touch-stone for gold, &c.

- بولتور *bultur* (adv.) last year, during last year.
 بولتورغي *bultur-ghi* (adj.) belonging to last year.
 بولجاق *buljâq* (subs.) a rendezvous, a station for troops (*see* ملجاء)
 بولدورماق *bol-dur-mâq* (v. caus.) to cause to become; *spec.* to reduce
 a horse to bad condition.
 بولغاتماق *bulgha-'t-mâq* (v. caus.) to cause to stir.
 بولغاشماق *bulgha-'sh-mâq* (v. recip.) to stir one another.
 بولغاماق *bulgha-mâq* (v. tr.) to stir round (as with a spoon); to spoil
 (an affair).
 بولقا *bolqâ* (subs.) a small hammer.
 بولماق *bol-mâq* (v. intr.) to become, to be, *also* to be done *or* com-
 pleted; *or conv.* to have effected one's purpose; (of a
 horse) to be done up; [in the future tenses] to suffice, to
 subserve, to do, to be good, *e. g.* *bola-dur*, "it will do."
 بولماك *bûl-mak* (v. tr.) to divide, to partition, to parcel out.
 بولوت *bûlût* (subs.) a cloud.
 بولوشتورماق *bol-ush-tur-mâq* (v. recip. caus.) to cause to be reconciled
 to one another.
 بولوشماق *bol-ush-mâq* (v. recip.) to be reconciled to one another, *lit.*
 to become (one) with one another.
 بولوشماك *bûl-ush-mak* (v. recip.) to divide amongst one-another.
 بولوم *bulum* (subs.) strength, firmness; (adj.) strong, firm.
 بولونگ *bulung* (subs.) a corner of any enclosed space.
 بولونماق *bolun-mâq* (pass. form of *bol-mâq*). To understand such
 an impossible word as *bolun-mâq* "to be become'd" it
 must be taken merely as the impersonal form (*see* Gram.
 p. 80, Syntax, § 14), like the French "on est devenu."
 Thus *kitâb-ni oqu'r bolundi* would be "one became
 (on est devenu) about to read the book (the book was
 about to be read)."
 بوي *bôî* (subs.) height, stature, tallness, figure; *also* length (as
 of a river); *also* edge, margin; (sometimes used for
 the river or water-course itself).
 بوياتماق *boya-t-mâq* (v. caus.) to cause to dye.

بوياشماق *boya-'sh-máq* (v. recip.) to dye one another.

بوياغ *boyá'gh* (subs. and adj.) dye ; also dyed [from *boya-máq*].

بوياق *boyá'q*, the same.

بوياشچي *boyá'q-chi* (subs.) a dyer.

بوياماق *boya-máq* (v. tr.) to dye.

بويداق *boïdák* (subs. and adj.) bachelor, unmarried, childless ;
also (of a mare) not having foaled.

بويرا *boïra* (subs.) a reed matting, P.

بويراك *büirak* (subs.) kidneys, Кн.

بوиламаق *böi-la-máq* (v. tr.) to measure height, to go over head and ears into ; also to move along the length of any thing,
" longer" FE. (from *böi*).

بويلوق *böi-luk* (adj.) tall, long.

بوين *büyan* (subs.) neck.

بويورماق *buyur-máq* (v. tr.) to command, to order ; also used respectfully instead of *qelmáq* "to do" in compounds. Also (the optative *buyur-sun-lar*) in inviting any one to sit down, or to begin anything, like the Italian "favore." "risca."

بويوروق *buyur-uq* (subs.) a command, a "firmán."

بуйун *búyun* (subs.) neck.

بوينتوروق *búyun-tur-uq* (subs.) a yoke, a horse-collar, [from *búyun*, and verbal subs. (form *f*, see Gram. page 53) of verb *tür-máq*].

بويي *bóyi* (the definite or possessed form of *böi*, which see).

بي *Bî* (subs.) a head-man among the Kirghiz.

بے بے *bîbî* (subs.) a lady, a woman (married).

بيدا *bédá* (subs.) lucerne grass (having purple flowers).

بيداو *bédao* (adj.) barren (used of women and mares) ; also of mixed breed.

بیر *bir* (num.) one.

بیرار *birar* (adv.) singly, in one.

براشماک or بیراشماک *bir-ash-mak* for *bir-ish-mak* (v. recip.) to unite in giving.

بیراق *beráq* (subs.) a small flag or standard.

بیراو *birao* (subs.) a single one.

بیرلا *birla* (p. p.) with.

بیرلاتماک *bir-la-t-mak* (v. caus.) to cause to become of one accord, to reconcile, or bring together.

بیرلاشماک *bir-la-'sh-mak* (v. recip.) to agree together in one accord.

بیرلان *birlan* (p. p.) with. See برلان

بیرک *birk* (adj.) firm, strong, fast.

بیرکیتماک *birk-it-mak* (v. comp. tr.) to fasten, to make fast.

بیرکیتماک *birki't-mak* (v. caus.) to cause to be concealed.

بیرکیشماک *birki'sh-mak* (v. recip.) to conceal one another; also (*birk-ish-mak*) to confirm one another.

بیرکیلماک *birk-il-mak* (v. pass.) to be made fast.

بیرکینماک *birki'n-mak* (v. refl.) to conceal one's self.

بیرماک *bir-mak* [Y. *ber-mak*] (v. tr.) to give; [also much used in composition with other verbs, as: *koyup-birmak* 'to give over' to burning, i. e. to burn, Cf. Hind. *jald déna*. With the Present Participle of another verb it implies beginning, e. g. *junaï birdi* "he began to go."

بیری *biri* (adv.) on this side, on the hither side.

بیریگماک *bir-ik-mak* (v. intr.) to agree together, to become one.

بیز *biz* (pron.) we.

بیز *biz* (subs.) a gland (especially as found in meat).

بیزاک *bézak* (subs.) adornment, finery.

بیزاکلاناک *bézak-la-'n-mak* (v. refl.) to adorn oneself.

بیزاکلاماک *bézak-la-mak* (v. tr.) to adorn, to beautify.

بیزدورماک *bez-dur-mak* (v. caus.) to cause to become wild.

بیزگاک *bezgak* (subs.) fever and ague.

بیزگالدک *bez-galdak* (subs.) a small black water-fowl, moor-hen.

بیزلار *biz-lar* (pron.) we [put into the plural form when several people are spoken of, to distinguish it from the (self-) respectful plural pronoun, *biz*, (we), used of a single person].

بیزماک *bez-mak* (v. intr.) to become wild, to cease frequenting (a

بیش *bésh* (num.) five.

[place].

- بېشار *besh-ar* (adv.) by fives.
 بېشېنچى *besh-inji* (adj.) fifth.
 بېشار *besh-ao* (subs.) a group of five, a five.
 بېشاۋلان *béschaolan* (subs.) a five, all the five, KH. KAZ.
 بېشايلان *béschailan* (subs.) the same.
 بېشېك *beshik* (subs.) a cradle.
 بېقىسم *bégasam* (subs.) a sort of striped silk stuff made in Bokhára, Khojand, Margilan, &c.
 بېك *bek* (adv.) strongly, very [for *birk*].
 بېگ *Bég* (subs.) a chief, a governor.
 بېگچىلىك *bég-chi-lik* (subs.) rule, chieftainship.
 بېگ لىك *béglik* (adj.) belonging to the chief.
 بېگىچ *békach* (subs.) the daughter of a Beg, or notable, KAZ.
 بېگىم *bégim* (subs.) the wife of a Beg [also *beg-im* "my Beg"].
 بېگە *békak* (subs.) the same as *békach*, KAZ.
 بېكىتىمەك *bik-it-mak* (v. caus.) for *birkitmak*, which see.
 بېگىز *bigiz* (subs.) an awl.
 بېكىلمەك *bik-il-mak* (v. pass.) for *birkilmak*.
 بېكىنمەك *bik-in-mak* (v. refl.) for *birkinmak*.
 بېل *bil* (subs.) a man's waist.
 بېل *bel* (subs.) a shovel, P.
 بېلازۇك *bilâzuk* (subs.) the wrist; also a wristlet, a bracelet, a handcuff, [see بېلازۇكى].
 بېلاك *bilak* (subs.) a man's fore-arm.
 بېلاتماك *bila-t-mak* (v. caus.) to cause to sharpen.
 بېلاشماك *bila-'sh-mak* (v. recip.) to sharpen in company.
 بېلاماك *bila-mak* (v. tr.) to sharpen, to whet.
 بېلان *bilân* (post-pos.) with [same as *bir-lan*].
 بېلاور *bilaor* (subs.) crystal, P.
 بېلاو *bilao* } (subs.) a whet-stone, a hone.
 بېلاي *bilai* }
 بېلباغ *bil-bâgh* } (subs.) a girdle, a waist-band, a waist-sash
 بېلباق *bil-bâq* } [from *bil* and *bâgh-la-maq*].
 بېلدۈرماك *bil-dur-mak* (v. caus.) to cause to know, to explain.

بيلقيلدا تماق *bilqilda-t-maq* (v. caus.) to cause to quake.

بيلقيلدا شماق *bilqilda-'sh-maq* (v. recip.) to quake together.

بيلقيلدا ماق *bilqildā-maq* (v. intr.) to quake [as a bog or a moss].

بيلقيلداق *bilqildāq* (subs.) a quaking bog; *also* a kind of red composition used for rings, buttons, &c., which gives to the touch.

بيلگۈ *bil-gū* (vl. subs.) a mark, an indication, a badge [the future participle of *bil-mak*].

بيلمك *bil-mak* (v. tr.) to know, to understand; *also* to think.

بىلا *billah* (adv.) together, in company.

بىلە *bilah* (post-pos.) with.

بىلىك *bil-ik* (vl. subs.) knowledge; *also* wisdom, [from *bil-mak*].

بىلىكلىك *bil-ik-lik* (vl. adj.) knowing, acquainted with [from *bil-mak*].

بىيۈك *biyuk* (adj.) high, elevated, КН. Каз.

بىيە *biyah* (subs.) a mare which has a foal.

پ

پاپى *pāpi* (subs.) a deformed dwarf whose head and trunk are of natural size.

پات *pāt* (adv.) quickly [also *fāt*].

پاتاقى *patāqi* (subs.) a percussion cap, P.

پاتراق *pāt-rāq* (adv.) more quickly.

پاتقاق *pātqāq* (subs. and adj.) a quagmire; *also* muddy, miry.

پاتمان *pātman* (subs.) a weight of 64 *chāraks*.

پاتنگان *patingan* (subs.) a vegetable, the "brinjal."

پاتوق *pātuk* } (subs. and adj.) a quagmire; miry.

پاتىق *pātik* }

پاچا *pācha* (subs.) the leg below the knee.

پاچاق *pāchāq* (subs.) the leg of an animal.

پاچاق *pachāq* (subs. and adj.) a dent in a metal kettle or saucepan; *also* dented.

پاختا *pākhta* (subs.) cotton-wool (cleaned of seeds).

- باختک *pakhtak* (subs.) a dove, *from* P.
 پارا *pára* (subs.) a bribe, P.
 پارا بیرماک *pára-birmak* (v. comp.) to bribe.
 پارا ییماک *pára-yémak* (v. comp.) to be bribed, *lit.* to eat bribes.
 پارچه *parcha* (subs.) a piece, P.
 پارچا لاتاق *parcha-la-t-máq* (v. tr.) to cause to put in pieces.
 پارچا لاشماق *parcha-la-'sh-máq* (v. recip.) to sub-divide together.
 پارچا لاماق *parcha-la-máq* (v. tr.) to put in pieces, to sub-divide.
 پاقا *pàqà* (subs.) a frog (see *baka*).
 پاقا چاناتق *pàqà-chanáq* (subs.) a tortoise (see *baqa-chanáq*).
 باقالچاق *paqàlcháq*, *the same as* baqalchaq.
 پاقتا *páqta*, *the same as* pakhta.
 پاک *pàk* (adj.) clean, P.
 پاکلا نىماک *pàk-la-'n-mak* (v. refl.) to clean one's self, P. T.
 پاکلاماک *pàk-la-mak* (v. tr.) to clean, P. T.
 پاکى *paki* (subs.) a razor.
 پاكى پىچاق *paki-picháq*, (subs.) a pen-knife.
 پالاس *pàlàs* (subs.) woollen matting.
 پالان *pálán* (subs.) a pack-saddle, P.
 پالو *palao* (subs.) a dish of rice and meat, "pilaw," P.
 پالتو *páltu* } (subs.) an axe, a hatchet.
 پالدو *páldu* }
 پالوان *pàlwán* (subs.) a strong man, an athlete, a wrestler; *also* a good sportsman; [*from* pahlwán, P.]
 پاىلا تماق *pai-la-t-máq* (v. caus.) to cause to keep watch, to cause to mount guard.
 پاىلا شماق *pai-lash-máq* (v. recip.) to mount guard together.
 پاىلاماق *pai-la-máq* (v. tr.) to mount guard.
 پاىلاى *pailai* (subs.) a leather gauntlet for carrying hawks, &c.
 پخته *pakhta*, *see* pakhta.
 پخته *pukhta* (adj.) experienced, careful, P.
 پرنال *partál* (subs.) a horse laden with personal necessities, (? P.).

پس *pas* (adv.) behind; also (adj.) for *past*, low, inferior, mean, base, P.

پسته *pista* (subs.) a pistachio nut.

پسته *pista* (subs.) a terrier, a small Chinese pug, any small dog.

پسکانه *pas-kanah* (adj.) little and mean, base, dirty [*past*, with diminutive affix *kana* or *ghina*], P. T.

پسکونه *pas-kunah*, the same as *pas-kanah*.

پسلا ماگ *pas-la-mak* (v. tr.) to abate, to diminish, P. T.

پوپوک *pupuk* (subs.) a tassel.

پوپوکچی *pupuk-chi* (subs.) a tassel-maker.

پوت *put* (subs.) leg, foot [also *fu*].

پوتاق *putaq* (subs.) a branch, a twig.

[write.

پوتتور ماگ *put-tur-mak* (v. caus.) to cause to trust; 2, to cause to

پوتماک *put-mak* (v. tr.) to trust, to believe; 2. to finish, to accomplish; 3. also for *pit-mak* (which see).

پوتوشماک *put-ush-mak* (v. recip.) to trust one-another; 2. to write to one another.

پوتوماک *putü-mak* (v. tr.) to write [for *pit-mak*].

پوتون *putün* (adj.) complete, entire.

پوچ *püch* (adj.) empty, without kernel; stupid, empty-headed.

پوچاق *puchaq* (subs.) the rind (of a fruit).

پوچاک *puchak* (adj.) empty, without kernel (used of nuts, &c.).

پوچقاق *puohqaq* (subs.) the leg-skin of a fox, wolf, &c., of which fur-robies are made.

پوچوق *puchuq* (subs. and adj.) a noseless man; noseless, snub-nosed.

پوخرا ت-ماق *pukhra-t-maq* (v. caus.) to cause to sneeze [used of flies teasing a horse's nose].

پوخرا ش-ماق *pukhra-'sh-maq* (v. recip.) to sneeze together, [when the horses of a Kazzak expedition do this it is considered a bad omen].

پوخرا ماق *pukhra-maq* (v. intr.) to sneeze (used of a horse or camel).

پور *pur* (adj.) rotten, unsound.

پورداق *purdag* (subs.) fat, Y.

- پوچاق *purohâq* (subs.) peas.
- پورخور اتماق *purkhura-t-mâq*, see *pukhrat-mâq*.
- پورخور آشماق *purkhura-'sh-mâq*, see *pukhrash-mâq*.
- پورخور اماق *purkhura-mâq*, see *pukhra-mâq*.
- پوستاک *postak* (subs.) a fur mat, P. T.
- پوستین *postin* (subs.) a fur robe, P.
- پوسدومبە *pos-dumba* (subs.) the fat of the "dumba" sheep's tail together with its skin (which is all eaten) [corr. from *post-i-dumba*, P.]
- پوش پوش *posh-posh* (interj.) used in clearing the road for a great man [? from *poshidan*, "to hide,"] P.
- پوشانگ *pushang* (subs.) a lever [especially one used for raising a mill-stone].
- پوشماق *push-mâq* (v. intr.) to be melancholy or disturbed in mind.
- پوشماک *pûsh-mak* (v. intr.) to become cooked; to ripen.
- پوشورماق *push-ur-mâq* (v. caus.) to cause to become melancholy, to vex.
- پوشورماک *pûsh-ür-mak* (v. caus.) to cause to become cooked, to cook (tr.); to cause to ripen.
- پوشونماق *push-un-mâq* (v. refl.) to vex one's self.
- پوق *puk* (subs.) excrement, dung.
- پوقاق *puqâq* (subs.) a goitre.
- پوک *puk* (adj.) hollow, empty (used of fruit, &c.).
- پوکیلدا اتماک *pukilda-t-mak* (v. caus.) to cause to sound hollow (by tapping or stamping, &c.)
- پوکیلدا ماک *pukilda-mak* (v. intr.) to sound hollow, to give a hollow sound.
- پول *pul* (subs.) a copper coin [the fiftieth part of a *tanga* which = 5 pence, about]; also money in general, P.
- پوللوق *pul-luq* (adj.) costing money, dear, expensive; possessed of money, rich, P. T.
- پیالە *piâlah* (subs.) a cup, also *vulg. used for glass*, as *pidlah-aîna*, "looking-glass," P.
- پیت *pit* (subs.) a louse.

پیتکروچی *pit-kh-ohi* (v. subs.) a writer (used only of the manual labour of writing).

پیتماک *pit-mak* (v. tr.) to write.

پیتورماک *pit-tur-mak* (v. caus.) to cause to write.

پیتیک *pit-ik* (v. subs.) a writing.

پیچاق *pichàq* (subs.) a knife (vl. subs. from *pich-mak*).

پیچاک *pichak* (subs.) a creeper, a plant which runs up trees and dies down in winter.

پیچان *pichan* (subs.) hay, any dried fodder.

پیچنورماک *pich-tur-mak* (v. caus.) to cause to cut out.

پیچیشماک *pich-ish-mak* (v. recip.) to cut out in company.

پیچماک *pich-mak* (v. tr.) to cut out any stuff to make a garment, &c. ; to carve.

پیس *pis* (subs. and adj.) spotted with leprosy ; also of animals with a similar appearance, КН.

پیساه *pisah* (subs. and adj.) *The same*.

پیگه *pega* or *peiga* (subs.) a horse-race (generally over many miles of distance).

پیلته *piltah* (subs.) the match of a match-lock gun, the cotton wick of a candle or lamp, P.

پیلله *pilla* (subs.) a cocoon (of the silk-worm).

پیلیک *pilik* (subs.) a candle-wick.

پیمان *païmàn* (subs.) a bushel, a measured (not weighed) quantity of grain, &c. [see next].

پیماننه *païmànah* (subs.) a bushel, a measure of capacity (varying in size), P.

ت

تابا *taba* (subs.) a flat iron pan for cooking, P.

تاباق *tabàq* (subs.) a dish, A.

تاپان *tapan* (subs.) the sole of the foot.

تاپتورماق *tàp-tur-màq* (v. caus.) to cause to find, to cause to produce.

تاپشماق *tàp-ish-màq* (v. recip.) to find one-another, to meet ; to marry one-another without the intervention of friends or agents.

تاپشورماق *tàp-shur-màq* (v. caus.) to cause to receive, viz. to entrust, to put under any-one's charge.

تاپقوجي *tàp-qu-chi* (subs.) a finder.

تابلانماق *tab-la-'t-màq* (v. tr.) to cause to twist (cloth or rope), to cause to wring.

تابلانماق *tab-la-'sh-màq* (v. recip.) to twist ropes in company [takes four men, three at one end to twist the strands, and one man at the other end to twist the united rope].

تابلانماق *tab-la-màq* (v. tr.) to twist, to twine, to wring.

تاپماق *tàp-màq* (v. intr.) to find, to meet with; to receive, to obtain.

تاپرش *tàp-ush* (v. subs.) findings, earnings, gain [from *tàp-màq*].

تاپوق *tàp-uq* (v. subs.) winnings (at play) [from *tàp-màq*].

تاپرناماق *tàp-u'n-màq* (v. refl.) to worship [? from obsolete *tàpu-màq* "to serve"] quasi to serve by one's own life.

تاتالانماق *tata-la-màq* (v. tr.) to scatch or tear with the nails or claws.

تاتليغ *tat-liḡ* } (adj.) tasty, savoury, sweet.

تاتليق *tat-liq* }

تاتانماق *tât-màq* (v. tr.) for *tàrt-màq* (which see).

تاتيتماق *tât-'t-màq* (v. caus.) to cause to taste.

تاتيشماق *tât-i-'sh-màq* (v. caus.) to taste together.

تاتيماناق *tât-i-màq* (v. tr.) to taste.

تاجي خوراز *tàj-i-khuràz* (subs.) *lit.* a cock's comb: the name of a plant, (? "Prince's feather"), corr. P.

تاجيك *Tājīk* (pr. name) the existing original Arian (Iranian) population of Western Central Asia, and their language; (opposed to *Turk* as 'Arab is to 'Ajam).

تاхта *takhta* (subs.) a plank, a board, a shelf, P.

تار *tār* (adj.) tight, close, confined, narrow.

تارانماق *tara-t-màq* (v. tr.) 1. For *tarqa-'t-màq* (which see).

2. To cause to comb [from *tara-màq*], KAZ.

تاراشماق *tara-'sh-màq* (v. recip.) 1. For *tarqa-'sh-màq*, KAZ.

2. To comb one's hair together, or for one-another.

تاراشه *taràshah* (subs.) a chip, a shaving; also a broad piece of wood used for punishing people by the Chinese, P.

تاراق *tàràq* (subs.) a comb.

تارالماق *tara-'l-màq* (v. pass.). For *tarqa-'l-màq*, KAZ.

تارام *taram* (subs.) a divarication, or branching off of one stream into many (as in a broad flat bed or in a delta). [? The name Tarim-gol for the River of Eastern Turkistán may be derived from this word, as it would express the characteristic of that River better than the word *tarim* = cultivated].

تاراماق *tara-màq* (v. tr.). 1. For *tarqa-màq*, KAZ. 2. To comb.

تاران *taran* (subs.) a root used in tanning.

تارانچی *tara-'nchi* (subs.) 1. a cultivator; 2. also the proper name applied to the Turki colonists in the country of Ila (Kulja), [from *tari-màq*].

تاربوز *tarbuz* (subs.) a water-melon, P.

تاربوغوز *târ-bughuz* (subs.) a gorge, the entrance to a ravine; lit. "narrow-throat" (see the words).

تارپی *tarpi* (subs.) carrion.

تارتشماق *tart-ish-màq* (v. recip.) to pull against one-another (to "play French and English").

تارتماق *tart-màq* (v. tr.) to draw, to pull; also to draw lines or figures; to draw out; to lead out (an army); to weigh.

تارتوق *tartuq* (subs.) tribute; the yearly offerings made by a local governor, &c. to his superior chief (so called because drawn out, as it were, from the country).

تاراراق *târ-ràq* (adj. comp.) narrower, more tight.

تارقاتماق *tarqa-'t-màq* (v. caus.) to cause to disperse.

تارقاشماق *tarqa-'sh-màq* (v. recip.) to scatter one's-selves apart, to depart from one another.

تارقالماق *tarqa-'l-màq* (v. pass.) to be scattered.

تارقاماق *tarqa-màq* (v. intr.) to disperse, to scatter.

تارلیق *târ-liq* (subs.) narrowness, tightness.

- تاري *tari*, KAZ. }
 تاريغ *tarigh* } millet.
 تاريق *tarig* }
 تاريگور *tari-'l-gu* (v. adj.) cultivable.
 تاريم *tarim* (adj.) cultivated, that has been cultivated.
 تاريماق *tari-màq* (v. tr.) to cultivate.
 تاز *tâz* (subs.) scald-head, 'Impetigo capitis.'
 تازا *tâza* (adj.) fresh, new, in good condition, strong, P.
 تازلاتماق *tâza-la-'t-màq* (v. caus.) to cause to renew, &c.
 تازالاشماق *tâza-la-'sh-màq* (v. recip.) to renew or mend, or clean, in company.
 تازالاماق *tâza-la-màq* (v. tr.) to renew, to mend, to strengthen.
 تازغون *tâzghun* (subs.) a stream, a flood. [Specially applied as the proper name of a River and district 14 miles south of Kâshghar.]
 تازي *tâzi* (subs.) a greyhound, P.
 تاش *tâsh* (subs.) a stone, (also a stone used for weighing), a milestone [the distance indicated is also called *sang* (=stone, P.) or *farsakh*, A. and is nominally 12,000 paces or about 5 miles.]
 تاش *tâsh* (subs. and adj.) the outside, outside.
 تاشابورت *tâsha-yurt* (comp. subs.) foreign country, *lit.* outside country.
 تاشقاري *tâsh-q'ari* (adv.) outside. [See Gram. p. 65 and ff.]
 تاشقون *tâsh-qun* (subs.) a flood in a stream.
 تاشلاتماق *tâsh-la-'t-màq* (v. caus.) to cause to throw.
 تاشلاشماق *tâsh-la-'sh-màq* (v. recip.) to throw at one another, to throw together, to stone.
 تاشلاماق *tâsh-la-màq* (v. tr.) 1. to throw, to throw away, *met.* to abandon, to reject (qu. from *tâsh*, a stone as a missile)
 2. to put outside, *viz.*, to line, to cover.
 تاشليق *tâsh-liq* (adj.) stony.
 تاشليق *tâsh-liq* (subs.) the outer covering of a cap, or of a fur robe, or of a mattress, &c.

تاشماق *tàsh-màq* (v. intr.) to overflow the brim, to boil over, to surge over.

تاش ياني *tàsh-yàni* [short for *tàsh-ning yàn-i*] (subs.) the outside.

تاشيق *tàsh-iq* (vl. subs.) an overflow, a boiling over, a flood.

تاشيمات *tàshi-màq* (v. tr.) to transport by repeated efforts, (as ants carrying away grain).

تاغ *tàgh* } (subs.) a mountain, a mountain chain.
تاق *tàq* }

تاغا *tagha* (subs.) a relation by the mother's side.

تاغار *taghar* (subs.) a bag, a sack.

تاق *tàq* (subs.) a single one, an odd number (opposed to *jufi*, P. "pair" or "even").

تاقا *taga* (subs.) a horse-shoe; an odd article (out of pair).

تاقاشماق *taga-'sh-màq* (v. recip.) to strike or press against one-another (qu. for *toqush-màq* which see); to oppress any one with much talking, to bore.

تاقتا *tagta* (subs.) *For* takhta.

تاقтурماق *tàq-tur-màq* (v. caus.) to cause to hang anything on to a person or animal.

تاقچا *tàq-cha* (subs.) a shelf formed by a recess in a wall.

تاقماق *tàq-màq* (v. tr.) to hang anything on to a person or animal, (as a charm or a locket).

تاقور *tagur* (subs.) a desert whose soil is hard and smooth. Каз.

تاقوشماق *tag-'ush-màq* (v. recip.) to hang things on to one another's person.

так *ták* (subs.) a vine, КН.

така *taka* (subs.) a buck goat, a buck antelope.

тал *tál* (subs.) 1. a willow, КН.; 2. a vine; 3. (? for *tàr* P.) a single one of any long objects, e. g. بر نال موي "a single hair," بر نال اوق "a single arrow."

таллада *talada* (adv.) out of doors.

тал-тал *tál-tál* (adj.) bushy, full (used of a woman's hair, or a horse's tail, or of fringe).

- تالا تماق *tala-'t-maq* (v. caus.) to cause to pillage.
- تالا شتور تماق *tala-'sh-tur-maq* (v. recip. caus.) to set a fighting (of dogs).
- تالا شماق *tala-'sh-maq* (v. recip.) lit. to rob one-another, to fight together (of dogs, &c.).
- تالا تماق *tala-maq* (v. tr.) to pillage, to rob; to fight (of animals).
- تالان *talan* (subs.) pillage, a pillaging.
- تالانماق *tala-'n-maq* (v. pass.) to be pillaged.
- تالار *talao* (subs.) a fatal illness of horses, KAZ.
- تالپونماق *talpün-mâq* (v. intr.) to flutter, to struggle.
- تالقان *talqan* (subs.) parched grain ground into flour. Hindi, 'sattu.'
- تام *tâm* (subs.) a wall.
- تاماق *tamaq* (subs.) the throat; also food (ready for eating).
- تامبال } (subs.) trousers, drawers, P.
- تامبان }
تامچی *tam-chi* (subs.) drippings, water oozing through the roof and falling by drops.
- تامچی *tâm-chi* (subs.) a wall-builder, a mason, [from *tam-maq*].
- تامدر, تماق *tam-dur-maq* (v. caus.) to cause to drip, to pour out by drops.
- تامغان *tamghan* (subs.) a branding iron.
- تامماق *tam-mâq* (v. intr.) to drip, to fall by drops.
- تامور *tamür* (subs.) the pulse.
- تاموغ } (subs.) hell.
- تاموق }
تامیتماق *tam-it-maq* (v. caus.) to cause to drip. The same as *tam-dur-maq*.
- تانا *tana* (subs.) a heifer or young bull, (a calf in the second year).
- تاندر, تماق *tân-dur-maq* (v. caus.) to cause to deny.
- تانسوق *tânsuq* (subs.) a longing, a desire.
- تانسوقلا, تماق *tânsuq-la-maq* (v. tr.) to long for.
- تانگ *tâng* (subs.) dawn, daybreak.

تانگ *tāng* (interj.) an exclamation implying astonishment ; “you don’t say so !” or “indeed.”

تانگ آتماق *tāng-āt-maq* (v. comp. intr.) to dawn, to break (said of the day) [from *tāng* “dawn,” and *āt-maq* “to shoot ;” with reference to the rays of light].

تانگ درماق *tāng-dur-maq* (v. caus.) to cause to bind.

تانگسوق *tāngsuq* (subs.). The same as *tansuq*.

تانگه قالماق *tāng-gha-qāl-maq* (v. comp. intr.) to remain in astonishment, to be amazed.

تانگلا *tāngla* (subs.) to-morrow, the morrow ; 2. a large wooden vessel for washing clothes, and mixing dough in.

تانگلا تانماق *tāng-la-’t-maq* (v. caus.) to cause to select, to offer to the choice.

تانگلاشماق *tāng-la-’sh-maq* (v. recip.) 1. to select in company ; 2. to be astonished.

تانگلاماق *tāng-la-maq* (v. tr.) to choose out, to select.

تانگماق *tāng-maq* (v. tr.) to bind a bundle, or any inanimate things, also a broken limb. [thing denied].

تانماق *tan-maq* (v. intr.) to give denial to [takes *ga* after the

تانوق *tanük* (v. subs.) recognition.

تانوقلوق *tanüq-luq* (v. adj.) recognised (from following).

تانوماق *tānū-maq* (v. tr.) to recognise.

تانوشماق *tānū-’sh-maq* (v. recip.) to recognise one another.

تانیشماق *tan-ish-maq* (v. recip.) to deny one another, or to one another.

تانیغلیق *tan-igh-liq* (v. adj.) denied.

تانیماق *tāni-maq* (v. tr.). The same as *tanü-maq*.

تاو *tāo* (subs.). The same as *tagh*, KAZ.

تاوا *tāwa* (subs.) a shallow pan for cooking in.

تاوالانماق *tāwa-la-’t-maq* (v. caus.) to cause to cry out.

تاوالاشماق *tāwa-la-’sh-maq* (v. recip.) to clamour or scold at one another.

تاوالاماق *tāwa-la-maq* (v. intr.) to clamour, to cry out.

- تارشقان *taushqan* (subs.) a hare.
- تاوق *tâuq* (subs.) a fowl.
- تارلانماق *tâu-la-'t-maq* (v. caus.). The same as *tab-la-'t-maq*.
- تارلاشماق *tâu-la-'sh-maq* (v. rec.). Same as *tab-la-'sh-maq*.
- تارلاماق *tâu-la-maq* (v. tr.). Same as *tab-la-maq*.
- تای *taï* (subs.) a young horse in the second year.
- تایا تایا *taya-taya* (pres. part.) slipping and sliding [pron. *taï-maq*].
- تایاق *tây-âq* (subs.) a walking-stick.
- تای خمر *taï-khar* (subs.) a young donkey, T. P.
- تایغاق *taï-ghak* (adj.) slippery; also given to slipping.
- تایغان *taï-ghan* (subs.) a greyhound.
- تایلاق *taï-laq* (subs.) a young camel (in the 2nd year).
- تایماق *taï-maq* (v. intr.) to slip, to slide.
- تاینچا *taï-ncha* (subs.) a heifer in the 2nd year, KAZ.
- تایوشماق *tay-üşh-maq* (v. recip.) to slide together, to amuse oneself by sliding on ice, or by sliding down a kind of "Montagne Russe."
- تبراتماک *tibra-'t-mak* (v. caus.) to cause to shake, to cause to remove itself.
- تبراشماک *tibra-'sh-mak* (v. recip.) to shake together.
- تبراماک *tibra-mak* (v. intr.) to shake, to move.
- تبرانماک *tibra-'n-mak* (v. recip.) to move, or shake, oneself.
- تبیت *tübit* [pron. *tibit*] (subs.) the down of the shawl-goat, [of which the finest in the world comes from Turfân].
- تدراتماک *titra-'t-mak* (v. caus.) to tremble.
- تدراشماک *titra-'sh-mak* (v. recip.) to tremble together.
- تدراماک *titra-mak* (v. intr.) to tremble, to quake, to shiver.
- تخی *takhi* (conj.) moreover, further, again.
- تراک *türaak* [pron. *trek*] (subs.) a prop, a support.
- ترساک *türsak* [pron. *tirsak*] (subs.) the elbow.
- تریک *türük* [pron. *trik*] (adj.) alive.
- تریک لیک *türük-lik* (subs.) life.

تُز *tüz* [pron. *tiz*] (subs.) knee.

تُزَا *taza* (subs.) knee.

تُزَا لَاتِمَاك *taza-la-'t-mak* (v. caus.) to cause to kneel.

تُزَا لَاشِمَاك *taza-la-'sh-mak* (v. recip.) to kneel opposite one another.

تُزَا لِمَاك *taza-la-mak* (v. intr.) to kneel.

تُزَا لَانِمَاك *taza-la-'n-mak* (v. refl.) to seat one's self in a kneeling position (sitting back on one's heels, the usual Turki sitting posture).

تُزِمَاك *taz-mak* (v. tr.) to Tange (things) in line.

تَس *tas* or *tis* (adv.) with difficulty, hardly.

تُش *tüş* [pron. *tish*] (subs.) tooth.

تُشَاتِمَاك *tüş-a-'t-mak* (v. caus.) to cause to renew the teeth, specially to file the teeth of a saw.

تُشَامَاك *tüş-a-mak* (v. intr.) to change the teeth, to cut a fresh set of teeth (both of men and animals).

تُشَتَاك *tash-tak* (subs.) an earthen vessel, KASHGAR.

تَقْصِير *taqsir* (interj.) lit. fault "culpa mea," A.; but used as a term of respect to a great man, equivalent to "Your Excellency," "Your Highness" (as if to excuse one's self beforehand for addressing a person of such dignity).

تَقِي *tagi* (adv.) moreover. The same as *takhi*.

تُكَن *tükan* [*tikan*] (subs.) a thorn.

تُكُتُورِمَاك *tük-tur-mak* [*tik-tur-mak*] (v. caus.) to cause to sew, &c.

تُكُلَانِمَاك *tük-la-'t-mak* (v. caus.) to cause to set upright.

تُكُلَاشِمَاك *tük-la-'sh-mak* (v. recip.) to join together in setting up-right.

تُكُلَامَاك *tük-la-mak* (v. tr.) to raise any long object into a vertical position, to set upright [see *tiklamak*].

تُكُلَانِمَاك *tük-il-an-mak* (v. pass. refl.) [from *tük-il-mak*] to stare at [governs *gha*].

تُكِمَاك *tük-mak* [*tik-mak*] (v. tr.) to sew, to fasten, to fix, to plant; to stake (at play).

تُكُشِمَاك *tük-ish-mak* [*tik-ish-mak*] (v. recip.) to sew together, &c.

تکلیماک *tük-il-mak* [*tik-il-mak*] (v. pass.) to be sewn, &c., also to have one's eyes fixed on anything, to stare [cf. "fixer," F.R.]

تگ *tag* (subs.) bottom [*tag-ida* "beneath"].

تل *tül* [*til*] (subs.) tongue; also language.

تلاتماک *tül* [*til*]-*la-'t-mak* (v. caus.) to cause to vituperate.

تلاشماک *tül* [*til*]-*la-'sh-mak* (v. recip.) to scold or abuse one another.

تلاک *tülak* [*tilak*] (v. subs.) an earnest desire, a prayer, [from *tilamak*].

تلاق *talaq* (subs.) the supra-renal capsule [a gland situated above the kidneys].

تلاماک *tül* [*til*]-*la-mak* (v. tr.) to scold or abuse, to "give the rough side of one's tongue" [from *tül*].

تلاماک *tüla-mak* [*tila-mak*] (v. tr.) to desire, to wish for; also to request, to ask for.

تلیک *tilpak* (subs.) a fur cap, with a covering of cloth or silk, and fur edging round the head.

تلفک *tilfak* (subs.). The same as *tilpak*.

تماک *tümak* (subs.) a fur cap extending down over the ears.

تمان *tuman* (num.) ten thousand.

تمغاق *tamghaq* (subs.) the fur of the throat of a lynx, fox, &c. [being fine, robes are made of a collection of such furs].

تمغه *tamgha* (subs.) a branding iron.

تنج *tünj* [*tinj*] (adj.) happy, at ease.

تنجی لیق *tünji-liq* [*tinj-liq*] happiness.

تندە *tandah* (subs.) a long thread prepared for the warp of a stuff to be woven, P.

تندور *tandur* (subs.) an oven, P.

تنکار *tana-kâr* (subs.) borax, P.

تنگ *tang* (subs.) a girth, P.

تنگری *tangri* (subs.) God. [Little used in Yarkand, &c.]

تنگلاماک *tang-la-mak* (v. tr.) to present, to offer, Y.

تنگە *tangah* (subs.) a money of account used in Turkistán,

consisting of 25 small copper "cash" (of Chinese make with square holes though them) called *dahchán*, each of which is worth two *pul* (imaginary coin). The value of the *tangah* varies constantly in the bazárs according to the number of *tangah* that may be given for a *kurs* (a Chinese silver ingot weighing about 2 lbs., and worth about 170 Rupees). Sometimes the number reaches 1100 and sometimes falls as low as 800. The Amir of Káshghar has lately supplied the lack of small silver coinage, by issuing silver coins worth a *tangah* each, and called *ak-tangah* (white tangahs) after the model of the Khokand and Bokhára coins so-called, but in the name of the Sultán of Turkey; they are current at a small premium. The Khosan *tangah* consists of 50 copper *shu-chan*, which are only slightly smaller than the Yarkand *dah-chan*. Consequently a Khosan *tangah* is worth nearly twice as much as a Yarkand or Káshghar one.

The word *tangah* is also used for the 'scales' of a fish.

تفور *tanur* (subs.) an oven, P.

تنيداه *tanidah* (subs.) Same as *tandah*, P.

توا *tuwa* (subs.) a two-humped camel [the sort more usual in East Turkistân], KIRGHIZ.

تواق *tuwâq* (subs.) a lid, cover of a saucepan.

تواق *tuwâq* (subs.) a hoof [same as *tuyaq*].

توب *tüb* (subs.) a root (used also in counting trees; as *öch түб даракht* "three trees"); also the bottom of anything. [Used as a comp. post-pos.; e. g., *kazan-ning түб-i-da* "in the bottom of the saucepan".]

توبان *tüban* (subs.) a low place [chiefly, as a post-pos. in comp.; e. g., *din tüban* or *ning tüban-i-da* "below"; also as an adv. absolutely].

- توبانراك *tüban-rák* (adv.) more below. Also (post-pos.) *din tüban-rák* "lower than."
- توبانلاش *tüban-lash* (adv.) downwards. [ceiling of a room.]
- توبروك *tübürük* [*tübrük*] (subs.) a pillar or prop supporting the
- توبروك *tuburuk*. (subs.). The same as *tubruk*.
- توپ *top* (subs.) a cannon.
- توپ *töp* (subs.) a definite quantity (of anything); e. g., a 'piece' of cloth, a 'herd' of cattle, &c.
- توپ *töp* (subs.) a ball used by children for playing.
- توپا *topa* (subs.) earth, dust.
- توباق *tobâq* (subs.) the cover of a saucepan.
- توبالانماک *topa-la-'t-mak* (v. caus.) to cause to heap up.
- توبالاشماک *topa-la-'sh-mak* (v. recip.) to heap up together.
- توبالاماک *topa-la-mak* (v. tr.) to heap up (as grain in a measure).
- توپچاق *topchâq* (adj.) long-necked like a Turkman horse (used of horses).
- توپچی *top-chi* (subs.) an artillery man, a gunner.
- توپچی *top-chi* (subs.) a row of buttons on the breast of a robe.
- توپه *tupah* (subs.) the top, also height [used as a comp. post-pos.; e. g., *tagh-ning tupa-si-da* on the top of the mountain].
- توپورماک *tupur-mak* (v. tr.) to spit, to spit out.
- توپورک *tupuruk* (subs.) spittle, saliva.
- توپي *topi* (subs.) a skull-cap.
- توت *tut* (subs.) mulberry, P.
- توناش *tut-ash* (adj.) touching, contiguous.
- توناشتورماق *tut-ash-tur-maq* (v. recip. caus.) to cause to ignite.
- توناشماق *tut-ash-maq* (v. recip.) to lay hold of, to kindle, to ignite [used only of fire; and governs *gha*].
- توتام *tut-am* (subs.) a measure of length, the length covered by the clenched hand, a "hand."
- توناملاتماق *tut-am-la-'t-maq* (v. tr.) to cause to measure by noting the successive lengths covered by the hand grasping the object.

توتاملاشماق *tut-am-la-'sh-maq* (v. recip.) to compare measurements thus taken.

توتاملاماق *tut-am-la-maq* (v. tr.) to measure by grasping in the fist.

توتقون *tut-qun* (subs.) captivity.

توتلوقماق *tut-luq-maq* (v. intr.) to stutter.

توتماق *tut-maq* (v. tr.) to grasp, to seize, to take.

توتوشتورماق *tut-ush-tur-maq* (v. rec. caus.) to cause to grasp one-another; viz. to cause to wrestle.

توتوشماق *tut-ush-maq* (v. recip.) to grasp one another, to wrestle.

توتولماق *tut-ul-maq* (v. pass.) to be seized; also to be eclipsed (of the sun and moon).

توتون *tutun* (subs.) smoke.

توتونماق *tut-un-maq* (v. refl.) to be seized with astonishment.

توتي *toti* (subs.) a pony, a small baggage horse.

توتي *toti* (subs.) a parrot, P.

توچ *tuch* (subs.) brass.

توچكورتماق *tuch-kur-'t-mak* (v. caus.) to cause to sneeze.

توچكوروشماق *tuchkur-ush-mak* (v. recip.) to sneeze together.

توچكورماق *tuchkur-mak* (v. intr.) to sneeze.

توچكوروك *tuchkur-uk* (v. subs.) a sneeze.

توختاتماق *tokhta-'t-maq* (v. caus.) to cause to stop.

توختاشماق *tokhta-'sh-maq* (v. recip.) to stop together.

توختاماق *tokhta-maq* (v. intr.) to stop, to halt.

توخماق *tokhmaq* (subs.) a mallet. For toqmaq.

توخو *tokhü* (subs.) a fowl.

توخوم *tokhum* (subs.) an egg, a seed.

توخوماق *tokhumak* (subs.) a seed used in dyeing (yellow and red).

توخي *tokhi* (subs.) a fowl.

تور *tur* (subs.) a net, P.

تور *tur* (subs.) the place of honour (in a company, &c.).

تورا *tura* (subs.) a Chief (among the Kalmâks); a Prince, a descendant of an independent sovereign, or of the

Prophet (sometimes). Amir Timur in his Autobiography applies the term to the descendants of Chingiz Khan, the then sovereign house. The family, which almost exclusively enjoys the title in Eastern Turkistân, is that derived from *Makhdam A'zim*, an eminent Sâyard and saint of Western Turkistân who, in the 16th century of our era, married a Kashgharian lady, a descendant of *Satug Bughra Khan* [one of the early kings of Kâshghar said to be of the race of Afrasiab, and whose descendants ruled till they were displaced by the Kara-Khatai power of the Gurkhân]. The family of *Makhdam A'zim* held sway in East Turki chiefly by virtue of the religious veneration felt for them, till they were ousted by the Chinese in the middle of last century, and have since made many attempts to regain it. (They are also termed "Khwaja" (pron. *Khoja*) which is the term applied to the offspring between a Sâyard and a woman of any other family who are not Sâyads). [Probably of MONGOL derivation.]

تورالماك *tura-'l-mak* (v. pass.) to be born, to be increased in numbers [said of the generations of men or animals].

توراماك *tura-mak* (v. intr.) to increase in numbers [said of the progenitor].

توربا *turba* (subs.) a nose-bag [for feeding horses] (for *tobra*).

تورت *tört* (num.) four.

تورتاو *tört-ao* (subs.) a four.

تورتاولان *tört-ao-lan* (subs.) a four, KAZ.

تورتاوي *tört-awi* (subs.) a four, KAZ.

تورتايان *tört-äylan* (subs.) a four.

تورتلانچي *tört-lanchi* (adj.) fourth, KAZ.

تورتلنچي *tört-unchi* (adj.) fourth.

تورتماك *turt-mak* (v. tr.) to poke, to prod (as a sleeping man, to awaken him).

تورتوشماك *turt-ush-mak* (v. recip.) to poke at one-another.

- تور تونماك *turt-un-mak* (v. refl.) to poke at one's self [used of the Russians crossing themselves], KAZ.
- تور دورماك *tür-dür-mak* (v. caus.) to cause to wind up, [from *turmak*].
- تور سوق *tursuq* (subs.) a leather water bottle, KAZ.
- تور غاي *turghai* (subs.) a lark.
- تور غوزماق *tur-ghuz-maq* (v. caus.) to cause to stand up, to arouse.
- تور غون *tur-ghun* (adj.) tame [from *tur-maq* "to remain"].
- تورقا *turqa* (adj.) silken (used for the stuff of a kind of sieve).
- تور لاماك *tur-la-maq* (v. tr.) to net (stitch); also to catch in a net.
- تور لاماك *tur-la-mak* (v. tr.) to change appearance, attributes or accompaniments, A. T.
- تور لانماك *tur-la-'n-mak* (v. refl.) to change one's own appearance or attributes or accompaniments, A. T.
- تور لوك *tur-luk* (adj.) various, diverse, [probably from *tawr*, A.].
- تورماق *tur-maq* (v. intr.) to stand, to rise on to one's feet, to remain, to stay [from the Continuative Participle of this verb a corrupted form, *dwr*, is in use as an auxiliary which has acquired the simple meaning of "is." See Gram.].
- تورماك *tur-mak* (v. tr.) to wind up, to roll up, KH.
- تورنا *turna* (subs.) a large bird with a long neck (? a crane), KH. KAZ.
- توروشماق *tur-ush-maq* (v. recip.) to stand together, to rise up together.
- توروشماك *tur-ush-mak* (v. recip.) to wind up together.
- توروغ } (adj.) bay [the colour of a horse].
- توروق } *turuq*
- تورولماك *tur-ul-mak* (v. pass.) to be wound or rolled up.
- توروم *turum* (subs.) an axle and socket (of a wheel), a door socket.
- تورومطاي *turumtai* (subs.) a sparrow-hawk.
- تورونماق *tur-un-maq* (v. refl.) to fix one's self [not in common use, but the probable origin of the name "*Tungani*," quasi

turun-gan "one who fixes himself," corrected to *trungan* and *Tungan* "a settler or colonist"; from *tur-maq* "to stand."

تورە *turah* (subs.). The same as *turd*.

توز *tüz* (adj.) straight, direct, right.

توز *tuz* (subs.) salt.

توز *toz* (subs.) the thin sheets of bark of the mountain birch tree, used as paper.

توزاتتورماک *tüz-a't-tur-mak* (v. caus.) to cause to make right.

توزاتشماک *tüz-a't-ish-mak* (v. recip.) to make right together.

توزاتماک *tüz-a't-mak* (v. tr.) to make right, to mend.

توزالماک *tüz-a'l-mak* (v. pass.) to be made right, to become right.

توزاق *tuzdq* (subs.) a springe, a horse hair loop for catching birds.

توزان *tozan* (subs.) dust in the air.

توزدورماق *toz-dur-maq* (v. caus.) to raise the dust.

توزدورماق *toz-dur-maq* (v. caus.) to wear out (clothes).

توزدورماک *tüz-dur-mak* (v. caus.) to cause to make straight.

توزغاق *tozghdq* (subs.) the cotton-like seed pods of a certain reed.

توزلیق *tüz-liq* (adj.) salt, tasting salt.

توزلیک *tüz-lik* (subs.) straightness.

توزماق *toz-maq* (v. intr.) to rise in clouds (said of dust).

توزماق *toz-maq* (v. intr.) to wear out, to become old.

توزماک *tüz-mak* (v. intr.) to be enduring, to be patient [governs *gha*].

توزماک *tüz-mak* (v. tr.) to straighten, to make straight.

توزوک *tüz-ük* (subs. and adj.) arrangement, order, institution; straight, arranged, orderly, correct. [Cf. the "*Tüzük Timurî*" so-called].

توس *tüs* (subs.) appearance.

توس *tos* (subs.) the thin sheets of bark of the mountain birch-tree. See *toz*.

توستاغان *tostaghan* (subs.) a small wooden cup, *Kaz*.

توستورماق *tos-tur-maq* (v. caus.) to cause to arrest, to get (any-one) stopped.

توسماق *tos-maq* (v. tr.) to stop, to arrest.

توش *tüsh* (subs.) a dream, a vision.

توش *tüsh* (subs.) direction.

توش *tüsh* (subs.) mid-day.

توش *tösh* (subs.) breast, chest.

توشاك *tosha'k* (verbal subs.) bed, bedding.

توشالماق *tosha-'l-mak* (v. pass.) to be spread, to be laid out; [used of any thing for sitting or lying upon].

توشاماك *tosha-mak* (v. tr.) to spread, to lay out [as above].

توشاماك *tüsh-a-mak* (v. tr.) to dream of, to see in a dream.

توشقارماق *tosh-gar-maq* } (v. caus.) to fill, (to cause to be full).
توشقازماق *tosh-qaz-maq* }

توشقان *taushqan* (subs.) a hare.

توشلانماق *tüsh-la-'n-mak* (v. refl.) to eat the mid-day meal with any one.

توشلوق *tush-luq* (subs. and adj.) equivalent.

توشلوك *tüsh-lük* (subs.) the mid-day meal.

توشماك *tüsh-mak* (v. intr.) to descend, to come down, to get off, to settle down [joined with other words to indicate various meanings, of which *tüsh-mak* supplies the element "down." Thus *ät-din tüsh-mak* "to dismount"; *tüsh-üp-ul-turmaq* "to sit down"; *yaqilip tüsh-mak* "to fall down"; *tüsh-üp qäl-mäq* "to remain fallen" i. e., "to have fallen off"].

توشورماق *tüsh-ür-mak* (v. caus.) to cause to descend, &c., [takes the place of *tüsh-mak* in transitive compounds, as *tüshür-üp sâlmäq* "to throw down"].

توشوك *tushuk* (subs.) a hole, an aperture.

توشوك *tüsh-ük* (subs.) a loss at play, losings (from *tüsh-mak*).

توشوماق *toshu-maq*. (See *tashi-maq*.)

توغ *tugh* (subs.) a yak's tail fastened at the top of a long stick

and used as the standard of a military officer of rank (not below that of Pansad or chief of five hundred); also to mark the graves of saintly personages.

توغا *togha* (subs.) a D-shaped buckle (without pin) attached to surcingle and girths.

توغاچي *toghachi* (subs.) a head-man, chief of an encampment or village, KAZ.

توغاناق *togha-naq* (subs.) a wooden square buckle used in fastening on a camel's load, KAZ.

توغاي *toghâi* (subs.) a plain covered with reeds.

توغدورماق *tugh-dur-maq* (v. caus.) to beget.

توغراتماق *toghra-'t-maq* (v. caus.) to cause to cut up small, to cause to mince.

توغراشماق *toghra-'sh-maq* (v. recip.) to cut up together.

توغراغۇ *toghraghu* (subs.) a juice exuding from the *toghraq* tree, and used as leaven in baking.

توغراق *toghraq* (subs.) a kind of Poplar tree.

توغرام *toghra'm* (verbal subs.) a morsel.

توغراماق *toghra-maq* (v. tr.) to cut up small, to mince.

توغري *toghri* (adj.) straight.

توغقان *tugh-qan* [pron. *tuq-qan*] (subs.) a relation, a relative; [*bir tugh-qan* applies to brothers and sisters (of one generation); *iki tugh-qan* applies to first cousins, *i. e.*, born of parents who were brothers or sisters (*lit.* two generations), and so on. This may be translated "related in the first, second, third, &c., degree"].

توغلۇق *tugh-luq* (adj.) possessed of the *tugh*, *i. e.*, entitled to carry the insignia of military rank. [Several Turkish Princes have borne this title, as, Tughluq Timur Khan, &c.]

توغما *tugh-ma* (subs.) a slave bred in the house; the child of slave parents.

توغماق *tugh-maq* (v. intr.) to give birth to, to bear [takes the object merely prefixed without the mark of the accusative: as, *ughul tugh-di* "she bore a son"].

- توغوت *tughut* (subs.) child-bearing, labour.
 توف *tuf* (subs.) saliva.
 توف *tôf* (subs.). For *tôp*.
 تونا *tufa* (subs.). For *tupa*.
 تونا *tofa* (subs.). For *topa*.
 توفراق *tofrac* (subs.) dust, earth, КН.
 توفورрук *tufuruk* (subs.) saliva.
 توق *toq* (adj.) satiated, sated.
 توقа *toqa* (subs.). The same as *togha*.
 توقаچ *toqâch* (subs.) a small biscuit.
 توقал *toqal* (subs.) the junior wife; also a hornless cow, Каз.
 توقай *toqai* (subs.). The same as *toghaï*.
 توقтатамақ *toqta-'t-maq* (v. caus.). The same as *tokhtatmaq*.
 توقташмақ *toqta-'sh-maq* (v. recip.). The same as *tokhtashmaq*.
 توقтамақ *toqta-maq* (v. intr.). The same as *tokhta-maq*.
 توقسابа *toq-saba* (subs.). The title of civil official of rank [according to Prof. Vámbéry, derived from *tugh* + *sahib*].
 توقсан *toqsan* (num.) ninety [qu. *töqös* "nine," + *un* "ten"].
 توقсаннечпи *toqsan-inchi* (num. adj.) ninetieth.
 توقқан *tuq-qan* (subs.). The same as *tugh-qan*.
 توقмақ *toqmaq* (subs.) a mallet.
 توقмақчи *toqmaq-chi* (subs.) a man who uses a mallet, or who makes them.
 توقмақламақ *toqmaq-la-maq* (v. tr.) to strike with a mallet or with any heavy object.
 توقотмақ *toqu-'t-maq* (v. caus.) to cause to weave.
 توقуз *toqöz* (num.) nine.
 توقузاولان *toqöz-aolan* (num. subs.) a nine, Каз.
 توقузайлан *toqöz-aïlan* (num. subs.) a nine.
 توقузунечпи *toqöz-unchi* (num. adj.) ninth.
 توقушмақ *toq-ush-maq* (v. recip.) to strike or brush against one another [qu. from an obsolete verb *toq-maq* "to strike," which has survived in the Osmanli dialect].

توقوشماق *toqu-'sh-maq* (v. recip.) to weave in company.

توقوم *toqum* (subs.) a felt put under the saddle.

توقوماق *toqu-maq* (v. tr.) to weave.

توك *tuk* (subs.) hair on men or animals' bodies (exclusive of beard, hair of the head, mane, tail, &c., which have separate names).

توكار *tokar* (adj.) lame.

توكاي *tokai* (subs.) leggings reaching up to the thighs, CHIN. (?).

توكتورماق *tuk-tur-mak* (v. caus.) to cause to empty by pouring out.

توكماق *tuk-mak* (v. tr.) to empty by throwing out the contents.

توكورماق *tuk-ur-mak* (v. tr.) to spit.

توكوردك *tukuruk* (subs.) saliva.

توكا *tuga* (subs.) a camel, [the variety is specified by prefixes : as *äri-tuga* the double humped camel, and *när tuga* the single humped camel].

توكاتماق *tuga-'t-mak* (v. caus.) to cause to come to an end, to conclude, to finish (tr.).

توكاراك *tugarak* (subs. and adj.) circuit ; circular.

توكاشماق *tuga-'sh-mak* (v. recip.) to come to a conclusion mutually, to come to terms together.

توكالماق *tuga-'l-mak* (v. pass.) to be finished [the sense of the Pass. taken from the Causative].

توكامالماق *tuga-mak* (v. intr.) to come to an end.

توكانماق *tuga-'n-mak* (v. refl.) to finish itself, or one's self, [practically almost equivalent to the passive].

توكما *tugma* (subs.) a button.

توكماق *tug-mak* (v. tr.) to tie in a knot.

توكون *tügün* (subs.) a knot (not a bow).

توكونچاق *tügün-chak* (subs.) a knot enclosing any small object [as when money is tied up inside a knot in the turban or sash].

تول *tül* (subs.) the total of the lambs produced in each year from a flock of sheep ; the year's increase of the flock.

- تول *tul* (adj.) widowed.
- تولا *tola* (adj. and adv.) many, much, very.
- تولان تورماك *tola-'t-tur-mak* (v. caus. redupl.) to cause to compensate.
- تولانماك *tola-'t-mak* (v. caus.) to cause to compensate.
- تولاشماك *tola-'sh-mak* (v. recip.) to compensate one-another.
- تولاماك *tola-mak* (v. tr.) to compensate, to make up for a loss of property.
- تولدورماق *tol-dur-maq* (v. caus.) to fill.
- تولغانماق *tolgha-'t-maq* (v. caus.) to cause to twist.
- تولغا *tolgha-'q* (vl. subs.) labour [of a woman with child].
- تولغانماق *tolgha-maq* (v. tr.) to twist, to twirl [generally applied to things which resist the process and require force, whereas *tâu-la-maq* applies to materials which yield easily].
- تولغانماق *tolgha-'n-maq* (v. refl.) to twist one's self, to writhe.
- تولقون *tolqun* (subs.) a wave, a breaker.
- تولقونلاماق *tolqun-la-maq* (v. intr.) to break into waves, to surge up.
- تولكي *tülki* (subs.) a large yellow variety of fox.
- تولماق *tol-maq* (v. intr.) to be full.
- تولوم *tulum* (subs.) a goat-skin taken off entire, freed of hair and otherwise prepared; used for holding grain or flour.
- تولون آي *tolun âi* (comp. subs.) the full moon.
- توم *tôm* (adj.) thick, substantial [used almost exclusively in application to spices and medicinal roots].
- تومار *tumâr* (subs.) a written charm, KAZ.
- تومار *tûmar* (subs.) a root of a tree dug up for fuel, also a log of drift wood. [head].
- توماغه *tumagha* (subs.) a hood (put on a hawk or hawking-eagle's
- توماق *tumaq* (subs.) a fur cap with three lappets, one for the nape of the neck, and one for each ear.
- تومان *tumân* (subs.) a fog.
- تومان *tuman* (subs.). For *tuban*.
- تومتاق *tumtaq* (subs.) a short story, a fable, a parable.

- تومشوق *tumshuq* (subs.) a beak, an animal's nose; a projection (of mountain).
- تومتاق *tum-ut-maq* (v. caus.). For *tamitmaq* (which see).
- توموز *tumuz* (subs.) the dog-days, the height of summer, A. (?)
- توموزماق *tum-uz-maq* (v. caus.). For *tamizmaq* (which see).
- تون *tün* (subs.) night.
- تون *tün* (subs.) a robe reaching to the calf [the usual outer garment of Central Asiatics].
- توناگون *tün-a-gön* (adv.) yesterday [from *tün* "night" and *gön* (*kön*) "day"; qu. 'the day belonging to last night'].
- تونگ *tung* (subs.) a wooden barrel for holding water, [fastened together with twisted wooden bands instead of hoops].
- تونگ *tong* (adj.) hard frozen [used chiefly of earth, mud, &c., not of water].
- تونگهوز *tongghuz* (subs.) a pig.
- تونگوز *tong-köz* (adj.) foreign, strange [said to be derived from *tong* and *köz*, (*lit.* 'frozen-eyes') because a stranger recognises no one, and preserves a cold aspect].
- تونگلاتماق *tong-la-'t-maq* (v. caus.) to cause to freeze.
- تونگلاشماق *tong-la-'sh-maq* (v. recip.) to freeze together, or, all at once.
- تونگلاماق *tong-la-maq* (v. intr.) to become frozen, to freeze; also, to harden with the cold, as butter.
- تونگلوق *tong-luq* (subs.) a hard frozen field [distinguished from the rest of the country where, no water having been artificially let in, the ground remains loose and friable through the severest frosts, such is the dryness of the climate].
- تونگلوك *tungluk* (subs.) a chimney (that part of it which projects above the roof); also, a hole in the roof, whether for the escape of smoke (from a Kirghiz tent), or for the admission of light; also, the felt sheet with which it is closed at night. [? derived from *tutün* "smoke"].

- تونونماق *tonu-'t-maq* (v. caus.). For *tonu-'t-maq* (which see).
- تونوشماق *tonu-'sh-maq* (v. recip.). For *tonu-'sh-maq* (which see).
- تونوكا *tunuka* (subs.) sheet iron, thin iron.
- تونوگون *tün-ü-gön* (adv.) yesterday, [see *tünagön*].
- تونوماق *tonu-maq* (v. tr.). For *tanumaq*, (which see).
- تورق *tuwaq* (subs.) a hoof.
- توي *töi* (subs.) a feast [either on the occasion of the circumcision of a boy, or of a marriage].
- تويا *tüya* (subs.) a camel, КН. Каз.
- تويچي *tüya-chi* (subs.) a guardian or attendant of camels.
- توياق *tuyaq* (subs.) a hoof, КН. Каз.
- تويدورماق *tüi-dur-maq* (v. caus.) to cause to be satiated, to satiate.
- تويدورماق *tüi-dur-maq* (v. caus.) to make (any one) aware of, to divulge.
- تويدورماк *tüi-dur-mak* (v. caus.) to cause to pound up.
- تويلوق *toi-luq* (subs.) preparations for a wedding feast; the bride's 'corbeille de marriage.' [peased, to be sated.
- تويماق *toi-maq* (v. intr.) to be satiated, to have one's hunger appeased.
- تويماق *tui-maq* (v. tr.) to become aware of, to find out (a secret).
- تويمак *tui-mak* (v. tr.) to pound, to reduce to powder by pounding.
- تيپا *tipa* (subs.) a small height, a mound [restricted meaning of the word *tupa*].
- تيپتورماк *tip-tur-mak* (v. caus.) to cause to kick.
- تيپмак *tip-mak* (v. tr.) to kick.
- تيپинмак *tip-in-mak* (v. refl.) to stamp on the ground; also, to kick one's horse's flanks with one's heels, "piquer des deux," Fr.
- تيپوشмак *tip-üş-mak* (v. recip.) to kick one another.
- تيبات *Tibat* (subs.) the country of Tibet (our so-called "Tibet"); also, an inhabitant of that country [the name is restricted to the districts on the upper Indus from Baltistan upwards, and is not extended to Eastern Tibet or Lhasa].

- تېيان *tiban* (subs.) a packing needle.
 تېبراتماک *tibra-'t-mak* (v. caus.). See *tabratak*.
 تېبراشماک *tibra-'sh-mak* (v. recip.). See *tabrashak*.
 تېبراماک *tibra-mak* (v. intr.). See *tabramak*.
 تېبرانماک *tibra-'n-mak* (v. refl.). See *tabranak*.
 تېبلغ *tibilghu* (subs.) a mountain bush of whose wood the handles of riding-whips are made.
 تېبنه *tibanah* (subs.) a packing needle. See *tiban*.
 تېر *tir* (subs.) perspiration.
 تېرا *tira* (subs.) skin (of men or animals).
 تېراتماک *tira-'t-mak* (v. caus.) to cause to prop up.
 تېراشماک *tira-'sh-mak* (v. recip.) to prop up in company.
 تېراک *tira-'k* (vl. subs.) a prop, a support (written also *tarak*).
 تېراک *tirak* (subs.) a variety of poplar grown in cultivated land.
 تېراماک *tira-mak* (v. tr.) to prop up, to support (by artificial means).
 تېرباسماق *tir basmaq* (comp. v. tr.) to perspire; also, to be ashamed [lit. "perspiration oppresses (him)"], (*tir* is the nominative, and the English subject takes the accusative form).
 تېرتیق *tirtiq* (adj.) having the skin drawn up by a wound or burn, [properly "*tartiq*"]. Also, (subs.) a scar.
 تېردورماک *tir-dur-mak* (v. caus.) to cause to gather up.
 تېرساک *tirsak* (subs.) elbow.
 تېرگوزماک *tirg-az-mak* (v. caus.) to cause to live, to give life; [for *tirik-guzmak*].
 تېرلاتماک *tir-la-t-mak* (v. caus.) to cause to perspire, to cause to sweat.
 تېرلاشماک *tir-la-'sh-mak* (v. recip.) to perspire together, to work hard in company.
 تېرلاماک *tir-la-mak* (v. intr.) to perspire.
 تېرماق *tirma'q* (v. subs.) a finger-nail, a claw, a talon (the points or nails of the same) [from *tirma-maq*].

تیرماک *tir-mak* (v. tr.) to gather up, to collect, to pick up (many small objects one by one).

تیرمالاماق *tirma-la-maq* (v. tr.) to cover seed up with earth after sowing (by hand).

تیرماماک *tirma-maq* (v. tr.) to scratch, to tear with the nails or claws.

تیرناتماق *tirna-'t-maq* (v. caus.) to cause to scratch.

تیرناشماق *tirna-'sh-maq* (v. recip.) to scratch one another.

تیرناق *tirna-'q* (v. subs.) a finger nail, a claw. See *tirmaq*. [claws.

تیرناماق *tirna-maq* (v. tr.) to scratch, to tear with the nails or

تیری *tiri* (subs.) the skin of any animal. See *tira*.

تیریتورماک *tirik-tur-mak* (v. caus.) to cause to be angry, to anger.

تیریشماک *tirik-ish-mak* (v. recip.) to be angry with one another.

تیریماک *tirik-mak* (v. intr.) to be angry [governs *gha*].

تیریگلیک *tir-ig-lik* (vl. adj.) gathered up, stored [from *tir-mak*].

تیریلغو *tiri-'l-ghu* (vl. adj.) cultivable [for *tarilghu* from *tarimaq*].

تیریلماق *tiri-'l-maq* (v. pass.) to be cultivated, to be sown.

تیریم *tirim* (subs. and adj.) cultivated land; cultivated.

تیریماق *tiri-maq* (v. tr.) to cultivate, to sow [for *tarimaq*].

تیز *tez* (adj. and adv.) quick, fast; also, quickly, P.

تیز *tez* (subs.) an instrument used for straightening or bending rods of tents, &c. [It consists of a strong piece of wood laid horizontally with a gap in its upper side to receive the object which requires to be straightened or bent], KAZ.

تیزا *tiza* (subs.) a knee [the same as *tiz*].

تیزاک *tiaak* (subs.) horse dung.

تیزراق *tez-râq* (adj. and adv.) quicker; more quickly.

تیزگین *tizgin* (subs.) reins, bridle.

تیزلانماک *tiz-la-'n-mak* (v. refl.) to rest on one's knees, to kneel.

تیزماک *tiz-mak* (v. tr.) to arrange in rows, or in line.

تیش *tish* (subs.) tooth.

- تیشاتماک *tish-a't-mak* (v. caus.) to cause to file the teeth of a saw.
 نیشاماک *tish-a-mak* (v. tr.) to file the teeth of a saw.
 تیشتوروماک *tish-tur-mak* (v. caus.) to cause to make holes.
 نیشقاری *tish-q'ari* (adv.) outside [for *tàshqari*].
 تیشلاتماک *tish-la-'t-mak* (v. caus.) to cause to bite.
 تیشلاشماک *tish-la-'sh-mak* (v. recip.) to bite one another.
 تیشلاماک *tish-la-mak* (v. tr.) to bite [from *tish* "tooth"].
 تیشماک *tish-mak* (v. tr.) to perforate, to make a hole in.
 تیشوک *tish-ük* (vl. subs.) a hole, a perforation.
 تیشولماک *tish-ül-mak* (v. pass.) to be perforated, to be pierced with a hole.
 تیشه *tishah* (subs.) an adze, a cutting tool with its edge set at right angles to the stock, and its inner surface at an acute angle with the same.
 تیشی *tishi* (adj.) female.
 تیشیک *tish-ik* (vl. subs.) a perforation [from *tish-mak*].
 تیفا *tifa* (subs.). For *tipa*.
 تیفماک *tif-mak* (v. tr.). For *tipmak*.
 تیقتوروماق *tiq-tur-maq* (v. caus.) to cause to ram in.
 تیقشماق *tiq-ish-maq* (v. recip.) to ram in in company.
 تیقماق *tiq-maq* (v. tr.) to press anything into a receptacle, to ram in.
 تیک *tik* (adj. and subs.) vertical, upright, steep, difficult; also, a steep place.
 تیکان *tikan* (subs.) a thorn.
 تیکلاتماک *tik-la-'t-mak* (v. caus.) to cause to set upright.
 تیکلاشماک *tik-la-'sh-mak* (v. recip.) to set upright together.
 تیکلاماک *tik-la-mak* (v. tr.) to set upright.
 تیکماک *tik-mak* (v. tr.) to sew, [see *takmak*].
 تیکیس *tikis* (adj.) smooth.
 تیکیسلاتماک *tikis-la-'t-mak* (v. caus.) to cause to make smooth.
 تیکیسلاشماک *tikis-la-'sh-mak* (v. recip.) to make smooth together.
 تیکیسلاماک *tikis-la-mak* (v. tr.) to make smooth.

تيكيسلاناك *tikis-la-'n-mak* (v. pass. or refl.) to be made smooth, to become smooth.

تيكه تيكه *tikah tikah* (adv.) in pieces [*tikah tikah geldi* "he put (it) in pieces"].

تيگشتورماک *tig-ish-tur-mak* (v. recip. caus.) to cause to exchange.

تيگشماک *tig-ish-mak* (v. recip.) to change anything against another, to exchange [from *tigmak*].

تيگماک *tig-mak* (v. intr.) to touch, to attain, to reach [governs *gha*].

تيگورماک *tig-ur-mak* (v. caus.) to cause to touch, to cause to attain (a mark), to hit [in the sense of reaching the object aimed at].

تيگورمان *tigürman* (subs.) a mill. [Qu. from *tigür-mak* "to cause to touch"].

تيگوزماک *tig-üz-mak* (v. caus.). The same as *tigürmak*.

تيگين *tigin* (subs.) the absence of a price (paid); *tigin-ga* "gratis," "for nothing," KAZ.

تيل *til* (subs.) tongue; also, language.

تيلانماک *tila-'t-mak* (v. caus.) to cause to desire.

تيلاشماک *tila-'sh-mak* (v. recip.) to desire of one another, to desire together.

تيلاک *tila'k* (vl. subs.) an earnest petition.

تيلاماک *tila-mak* (v. tr.) to desire, to ask for.

تيلانچي *tila-'n-chi* (subs.) a beggar.

تيلپک *tilpak* (subs.) a fur cap.

تيلبه *tilba* (adj.) idiotic, foolish.

تيلبه ليک *tilba-lik* (subs.) idiocy, foolishness.

تيلچي *til-chi* (subs.) a spy, a news collector.

تيلدورماک *til-dur-mak* (v. caus.) to cause to split, to cause to cut anything lengthwise.

تيلفاک *til-fak* (subs.). For *tilpak*.

تيللانماک *til-la-'t-mak* (v. caus.) to cause to abuse, to cause to scold.

تيللاشماک *til-la-'sh-mak* (v. recip.) to scold at one another.

- تيللاماك *til-la-mak* (v. tr.) to abuse, to scold, to 'give the rough side of one's tongue' [from *til* "tongue"].
- تيلماک *til-mak* (v. tr.) to split, to cut anything into strips lengthwise [from *til*; qu. to make into strips like tongues].
- تيلمورناماك *tilmür-'t-mak* (v. caus.) to cause to dance attendance.
- تيلمورماک *tilmür-mak* (v. intr.) to be in a state of humble expectancy, to dance attendance.
- تيلموروشماک *tilmür-ush-mak* (v. recip.) to dance attendance together.
- تيلیک *til-ik* (vl. subs.) a slit or cut lengthwise [from *til-mak* "to slit"].
- تيليم *til-im* (vl. subs.) a strip or tongue (what remains between slits).
- تيمار *timao* (subs.) a cold, rheum.
- تيمراتکو *timratku* (subs.) an itching red spot on the skin.
- تيمور *timur* (subs.) iron.
- تيمورچی *timur-chi* (subs.) a blacksmith, an ironsmith.
- تين *tigin* (subs.) a squirrel, KAZ.
- تينداک *tintak* (adj.) mad, insane. [Qu. for *tintrak* from *tintra-mak*.]
- تينتراناماک *tintra-'t-mak* (v. caus.) to cause to totter, or waver.
- تينتراشماک *tintra-'sh-mak* (v. recip.) to totter or waver together.
- تينتراماک *tintra-mak* (v. intr.) to totter; also, to vacillate, to waver.
- تينچ *tinch* (adj.) at ease, happy, well [qu. from *tin-mak*].
- تينچ ليک *tinch-lik* (subs.) ease, happiness.
- تيندورماق *tin-dur-maq* (v. caus.) to make quiet, &c. &c.
- تينشماق *tin-ish-maq* (v. recip.) to be quiet together, &c. &c.
- تينگ *ting* (adj.) of equal height.
- تينگلانماق *ting-la-'t-maq* (v. caus.) to cause to listen.
- تينگلانماک *ting-la-'t-mak* (v. caus.) to cause to make equal in height.
- تينگلانماق *ting-la-'sh-maq* (v. recip.) to listen to one another or together.
- تينگلانماک *ting-la-'sh-mak* (v. recip.) to make equal together.
- تينگلانماق *ting-la-maq* (v. tr.) to listen.

تینگلاماك *ting-la-mak* (v. tr.) to make equal (in height), also, to compare heights.

تینگیز *tingiz* (subs.) a large lake, a sea.

تینماق *tin-maq* (v. intr.) 1, to be quiet (said e. g. of a child); to settle (as muddy water); to be filled in and made level (as of an old well); 2, to sigh.

تینیش *tin-ish* (subs.) a sigh.

تینیق *tin-iq* (adj.) clear, not muddy; *lit.* settled.

تیوا *tiwa* (subs.) a camel.

ج

جابان *jaban* (subs.) a range of shelves (in a shop, &c.).

جابدماق *jabdu-maq* (v. tr.) to prepare, to make ready (for an expedition).

جابدوق *jabduq* (vl. subs.) the complete accoutrement of a horse (either for riding, or for draught or carriage); also, the material preparations for a journey.

جار *jâr* (subs.) the high bank of a river [properly *yâr*].

جار *jâr* (subs.) the crying of articles, &c. in the bazar, a proclamation.

جارا *jara* (subs.) a wound [for *jarâhat*, P.].

جارانگلاتماق *jarang-la-'t-maq* (v. caus.) to cause to tinkle, to ring (a bell, &c.).

جارانگلشماق *jarang-la-'sh-maq* (v. recip.) to tinkle together.

جارانگلاماق *jarang-la-maq* (v. intr.) to tinkle, to resound, to ring (intr.).

جارچی *jâr-chi* (subs.) a town-crier [from *jâr*].

جام *jâm* (subs.) a metal or wooden cup, P.

جامان *jaman* (adj.) bad [for *yaman*].

جامغور *jamghur* (subs.) rain [for *yamghur*].

جانگ *jang* (subs.) a cold.

جانجل *janjâl* (subs.) a tumult, a row, a quarrel, P.

جانجال لاشماق *janjál-la-'sh-maq* (v. recip.) to quarrel with one another, to have a row.

جانسوز *jan'súz* (subs.) a spy, a tell-tale [for *jasús*, P.].

جانلیق *ján-liq* (subs.) sheep or goats (considered *en masse* without reference to age or sex) [*lit.* living creature, P. T., specialized to refer to the flocks which are the principal possessions of a nomad people, as "birds," with English sportsmen, have come to mean specially partridges].

جارا *jawa* (subs.) a sack made of coarse goat's hair.

جاران *jawan* (subs.). For *jaban*.

جایی *jái* (subs.) a place, P.

جایلاشقان *jái-la-'t-maq* (v. caus.) to cause to put in the proper place, to cause to set in order.

جایلاشماق *jái-la-'sh-maq* (v. recip.) to place in proper order mutually, or relatively to one another. [place, P. T.]

جایلاماق *jái-la-maq* (v. tr.) to place in order, to put in the proper

جایلانماق *jái-la-'n-maq* (v. pass. and refl.) to be put or to put one's self in the proper place.

جدلچی *jadal-chi* (subs.) a quarrelsome person, a disputer, P. T.

جدلاشتورماق *jadal-la-'sh-tur-mak* (v. recip. caus.) to cause to quarrel with one another.

جدلاشماق *jadal-la-'sh-mak* (v. recip.) to quarrel with one another [from a supposed simple verb *jadal-la-mak* which is not in use, because "it takes two to make a quarrel"].

جزانہ *jazanah* (subs.) interest (on money lent), usury.

جزایل *jazaïl* (subs.) a short gun carried on a camel, P.

جزایلچی *jazaïl-chi* (subs.) a man who serves the *jazaïl*, P.

جلب *jalab* (subs.) a harlot.

جلغہ *jilghah* (subs.) a valley, a gorge, a ravine.

جمعة *juma'h* (subs.) Friday, the day of assembly, A.

جمہ *jumah* (interj.) do you hear?

جندہ *jandah* (subs.) a beggar's gaberdine [a robe with little tufts of thread-ends sticking out every here and there].

جَنَسْتَه *janistah* (subs.) a small stone-fruit of the plum kind.

جَنگ *jing* (subs.) a weight (equal to about 1·275 lbs.).

جِرا *jāa* (subs.) a fur robe, a "posteen." For *jūba*.

جواب *jawāb* (subs.) answer, dismissal, leave to go; also, leave or permission of any kind, P.

جوابلاشتورماق *jawāb-la-'sh-tur-maq* (v. recip. caus.) to cause to make retorts.

جوابلاشماق *jawāb-la-'sh-maq* (v. recip.) to answer back again, to retort; also, to discuss, dispute.

جواتماق *jawā't-maq* (v. caus.) to cause to be occupied in anything, to amuse (said with reference to children). For *yuwat-ma'q*.

جوان *jawan* (adj.) mature, matronly [epithet applied to a woman who has a child, but is still young].

جوانماق *jawa-'n-maq* (v. refl.) to occupy or amuse one's self. For *yuwammaq*.

جوبا *juba* (subs.) a fur robe, P.

جوجه *juja* (subs.) a chick.

جوف *juf* (subs.) a pair. [For *juf't*, P.].

جوفلاشتورماق *juf-la-'sh-tur-mak* (v. recip. caus.) to cause to pair.

جوفلاشماق *juf-la-'sh-mak* (v. recip.) to match together, to be similar; also, to be joined together smoothly.

جوفلاماك *juf-la-mak* (v. tr.) to match or pair (two objects), to render similar or equal; also, to join together smoothly.

جوجان *jugan* (subs.) a horse's headstall and bit.

جول *jul* (subs.) a horse blanket, P.

جوناتماق *juna-'t-mak* (v. caus.) to cause to start.

جوناشماق *juna-'sh-mak* (v. recip.) to start together.

جوناماك *juna-mak* (v. intr.) to start, to depart.

جياك *jiaak* (subs.) an edging or binding (of any garment, on the outer side, such as a tape sown round).

جياكلاماك *jiaak-la-'t-mak* (v. caus.) to cause to put an edging (to a garment).

جياكلاشماك *jiak-la-'sh-mak* (v. recip.) to put an edging on in company.

جياكلاماك *jiak-la-mak* (v. tr.) to put an edging or binding on a garment.

جيب *jib* (subs.) thread (of cotton).

جيران *jiran* (subs. and adj.) an antelope or gazelle (*Saiga Turtarica*); also, chesnut (the colour of a horse).

جيق *jiq* (adv.) much, many.

چيكده *jikda* (subs.) the Trebizond date tree and fruit.

جیل *jil* (subs.) wind; also *yil*.

جیلار *jilao* (subs.) a thin rope attached to the horse's bit on one side, and used for fastening him up on dismounting. Its loose end is carried noosed to the pommel of the saddle.

جیلیم *jilim* (subs.) glue.

جین *jin* (subs.) a sort of Demon, A.

چیناک *jainak* (subs.) elbow.

چ

چابا *chaba* (subs.) sweepings, refuse. For *chabar*.

چاباق *chabaq* (subs.) a species of fish.

چاپات *chapat* (subs.) a pat, a slap; also, a thin cake made by patting the dough between the hands. [Cf. *chupatti*, H.].

چاپاق *chapaq* (subs.) gumminess in the eyes.

چاپاغان *chap-a-ghan* (subs.) a rapid expedition.

چاپالاق *chapalaq* (subs.) the flat of the hand (as used for giving a slap), a slap. [Also written *shapalaq*.]

چاپان *chapan* (subs.) a robe or gown reaching nearly to the ankles [the ordinary outer garment of Central Asia].

چاپاو *chapáo* (subs.) a plundering.

چاپادل *chapául* (subs.) a plundering raid; also, a charge of cavalry.

چاپتورماق *chap-tur-maq* (v. caus.) 1, to cause to gallop; 2, to cause to strike with the sword or any cutting instrument.

چابشماق *chap-ish-maq* (v. recip.) 1, to gallop together, to race against one another (of horses); 2, to strike one another with swords, to fight one another with swords.

چابقو *chap-qu* (subs.) a board for chopping on.

چابقولانماق *chap-qu-la-'t-maq* (v. caus.) to cause to chop.

چابقولاشماق *chap-qu-la-'sh-maq* (v. recip.) to chop at one another, or in company.

چابقولاماق *chap-qu-la-maq* (v. tr.) to strike repeatedly with a sharp instrument, to chop.

چابقورن *chap-qu'n* (subs.) a snow storm accompanied by a cutting wind.

چابماق *chap-maq* (v. intr.) to gallop.

چابماق *chap-maq* (v. tr.) to strike with a cutting instrument.

چاپي *chapi* (subs.) a shampooing.

چاپيق *chap-iq* (vl. subs.) a cut, a wound [so called even after healing].

چات *chat* (subs.) the angle at the junction of two streams [used elsewhere for angles formed by other things].

چاتاڭ *chatāgh* }
چاتاق *chatāq* } (adj.) puzzle-headed, confused, at cross purposes.

چاتشماق *chat-ish-maq* (v. recip.) to tie many horses two by two.

چاتماق *chat-maq* (v. tr.) to tie two horses together, the head of each to the crupper of the other [this is the common way of securing caravan horses in the open plains and treeless mountains of Central Asia].

چاترۇق *chatuq* }
چاتىق *chat-iq* } (subs.) a couple of horses thus fastened together ;
also, the fastening of them so.

چاجماك *chajmak* (subs.) a jacket with long sleeves.

چاچ *chach* (subs.) the hair of the head.

چاچاق *chachaq* (subs.) a fringe, a tassel.

چاچماق *chach-maq* (v. tr.) to scatter seed, to sow.

چاچيراماق *chachira-maq* (v. intr.) to splash, to be splashed (of water).

چارا *chara* (subs.) a large wooden bowl or vessel.

چارا *châra* (subs.) help, remedy, P.

چارالتاماق *chara-la-'t-maq* (v. caus.) to cause to remedy.

چارالاشماق *châra-la-'sh-maq* (v. recip.) to remedy together.

چارالاماق *châra-la-maq* (v. tr.) to remedy.

چاراك *chârak* (subs.) a certain weight. [There are three distinct *charaks* in Eastern Turkistán: One used for raw silk, certain colouring materials, spices, tea, &c.; it is equal to 4 *jings*, or 5 lbs. The second is used for all manner of goods, and is called *ashliq tashi* "food weight," also *tört-tash* "four weights"; it weighs 12½ *jings* or nearly 16 lbs. This is distinguished from the third sort recently introduced by the Amir which is called *beshtash* "five weights," and weighs 16 *jings* or 20 lbs.]

چارالتاماق *char-la-'t-maq* (v. caus.) to cause to reconnoitre.

چارالاشماق *char-la-'sh-maq* (v. recip.) to reconnoitre one another, to reconnoitre in company.

چارلاق *char-la'q* (vl. subs.) a reconnaissance.

چارلاشيبي *char-la'k-chi* (subs.) a reconnoiterer, a patrol.

چارالاماق *char-la-maq* (v. tr.) to reconnoitre.

چاروا *chârwa* (subs.) quadrupeds, cattle, P.

چاروادار *chârwa-dar* (subs.) an owner of cattle, sheep or other quadrupeds.

چاروزة *charozah* (subs.) a small carpet the length of a bed.

چاروق *châroq* (subs.) a rough boot of untanned leather formed like a mocassin with the lower leather drawn up round the foot; worn by the Kirghiz mountaineers, and by caravan-men for journeys.

چاري *châri* (subs.) grain with the husk on.

چارا تاش *chaza tash* (subs.) jade stone obtained from the quarries in the mountains. Distinguished from *su-tash* "water-stone," which is jade found in the form of rolled pebbles in the streams. In this state it is free from flaws

which have all been found out by the hard usage it has received, so that what remains is solid. This gives it a greater value for carving; whereas in carving a piece of *chaza task*, the risk is incurred of finding many days of labour spoilt, by a hidden flaw or crack.

چاش *chash* (subs.) a heap of grain piled up after thrashing and winnowing. Also for *chash*t (which see), P.

چاشب *cha-shab* (subs.) light bed clothes for the summer [? for *chadir-i-shab*, P.].

چاش غلبر *chash-ghalbir* (subs.) an open sieve for separating the chaff from the grain.

چاشگا *chash-gā* (comp. subs.) the hour half way between sun-rise and midday, (at which a meal is often eaten), P.

چاشلانماق *chash-la-'t-maq* (v. caus.) to cause to heap up grain.

چاشلاشماق *chash-la-'sh-maq* (v. recip.) to heap up grain together.

چاشلاماق *chash-la-maq* (v. tr.) to heap up cleaned grain.

چاغ *chagh* (subs.) account, reckoning, conjecture, inference; also, number; also, time, epoch (any fixed time).

چاغاتاي *Chaghatai* (subs.) (Pr. name.) A son of Chinghiz Khán; his descendants or family; the tribes over which they ruled; the country ruled by them (in some books this includes the whole patrimony of Chaghatai, but usually only that which was left after the separation of the Kháns of the Moghuls, viz., Western Turkistán); the language spoken in Western Turkistán. [The term is now dying out except in talking of the past.]

چاغان *chaghan* (subs.) a winter festival of Chinese origin.

چاغلانماق *chagh-la-'t-maq* (v. caus.) to cause to conjecture.

چاغلاشماق *chagh-la-'sh-maq* (v. recip.) to form conjectures together.

چاغلاماق *chagh-la-maq* (v. tr.) to conjecture, to surmise, to reckon (anything that is expressed in numbers).

چاغلوک *chagh-lük* (adj.) conjectural [from *chagh*].

چاق *chaq*. The same as *chagh*.

- چاقا *chaqa* (subs.) a copper coin, КН.
- چاقان *chaqan* (adj.) light coloured (applied to eyes).
- چاقان *chaq-qan* (vl. adj.) fiery, sparkish, excitable.
- چاقلاماق *chaq-la-maq* (v. tr.). The same as *chagh-la-maq*.
- چاقماق *chaq-maq* (v. tr.) to bite or sting (with venom); to slander, to detract.
- چاقماق *chaq-maq* (v. intr.) to sparkle, to give forth sparks; also, (v. tr.) to crack.
- چاقماق *chaqmaq* (subs.) a steel for striking a light on flint.
- چاقич *chaqich* (subs.) a kind of resin extracted from the birch tree and also from firs.
- چاقير-ت-ماق *chaqir-'t-maq* (v. caus.) to cause to call.
- چاقير-ش-ماق *chaqir-'sh-maq* (v. recip.) to call in company.
- چاقير-ماق *chaqir-maq* (v. tr.) to call, to summon.
- چاقيش-تور-ماق *chaq-ish-tur-maq* (v. recip. caus.) to cause to sting or slander one another.
- چاقيش-ماق *chaq-ish-maq* (v. recip.) to sting one another, to slander one another.
- چاقيلماق *chaq-il-maq* (v. pass.) to be slandered; 2, to be cracked.
- چاقينماق *chaq-in-maq* (v. refl.) to sparkle, to lighten of itself (of the lightning).
- چال *chál* (adj.) partly black and partly white (of the hair, or beard), КН.
- چالا *chála* (adj.) unfinished, incomplete.
- چالاب *chaláb* (subs.) a drink made by mixing water with curds and whey.
- چالبار *chalbar* (subs.) wide outer trowsers made of leather (into which the robes are tucked for work in which they would be in the way), P. (*shalvas*).
- چالبار-قا-ت-ماق *chalbar-qa-'t-maq* (v. caus.) to cause to scold.
- چالبار-قا-ش-ماق *chalbar-qa-'sh-maq* (v. recip.) to scold one another.
- چالبار-قاماق *chalbar-qa-maq* (v. intr.) to scold, to upbraid, to abuse.
- چالپاك *chalpak* (subs.) a thin cake of bread cooked in oil.

چالپايماق *chalpai-maq* (v. intr.) to sink down exhausted, to be prostrated (by weakness).

چالچىق *chalchiq* (subs.) a boggy or miry spot, (permanent).

چالشتورماق *chāl-ish-tur-maq* (v. recip. caus.) to cause to wrestle.

چالشماق *chāl-ish-maq* (v. recip.) to twist one another, to wrestle.

چالقا *chalqa* (subs. and adv.) on one's back, face upwards; also, *chalqa-si-da*, &c.

چالقايتماق *chalqa-i't-maq* (v. caus.) to cause to lie face upwards, to turn any one over on to his back.

چالقايلمق *chalqa-i-maq* (v. intr.) to lie on one's back.

چالقيماق *chalqi-maq* (v. intr.) to surge (of water).

چالما *chalma* (subs.) a lump of hard earth, a piece of sun-dried brick.

چالماق *chāl-maq* (v. tr.) to twist over; specially 1, to trip up; 2, to braid, to tat, to crochet; 3, to stir up (of liquids); 4, to beat a roll on a drum, to sound a call on the trumpet.

چالناماق *chāl-in-maq* (v. pass. and refl.) to be twisted, &c., to twist one's self, &c.

چاما *chāma* (subs.) a conjecture, KAZ.

چامالاتماق *chāma-la-'t-maq* (v. caus.) to cause to conjecture.

چامالاشماق *chāma-la-'sh-maq* (v. recip.) to conjecture together.

چامالاماق *chāma-la-maq* (v. tr.) to conjecture.

چامان *chaman* (adj.) slow, sluggish, KAZ.

چامپان *champan* (subs.) a branded malefactor, CHIN. [Cf. *chop* (?)].

چامغور *chamghur* (subs.) turnip, Y.

چانا تماق *chana-'t-maq* (v. caus.) to cause to cut with an axe.

چاناشماق *chana-'sh-maq* (v. recip.) to cut with axes together, or one another.

چاناغ *chanaq* (subs.) a funnel-shaped feeder of a mill.

چاناماق *chana-maq* (v. tr.) to cut with an axe.

چانگ *chang* (subs.) dust flying in the air.

- چانگاك *changak* (subs.) a group of hooks to which butchers hang their meat.
- چانگال *changal* (subs.) a claw, a talon.
- چانگقاشماق *changqa-'sh-maq* (v. recip.) to be thirsty in company.
- چانگقاماق *changqa-maq* (v. intr.) to be thirsty.
- چاوره *châurah* (subs.) circuit, circumference. [child.
- چاۋكان *châukan* (subs.) a young woman who has not borne a
- چاۋگون *châu-gun* (subs.) a tea-pot (used also for the vessel in which the water is boiled).
- چاي *châi* (subs.) tea.
- چايان *chayan* (subs.) scorpion.
- چاي جوش *châi-josh* (subs.) a tea-pot [that in which the water is boiled is called "*kara* (or black) *châi-josh*"; that from which the tea is poured into the cup is called "*ak* (or white) *châi-josh*" for obvious reasons], P.
- چايقانماق *châi-qa-'t-maq* (v. caus.) to cause to rinse out.
- چايقاشماق *châi-qa-'sh-maq* (v. recip.) to rinse out together.
- چايقالماق *châi-qa-'l-maq* (v. pass.) to be rinsed out.
- چايقاماق *châi-qa-maq* (v. tr.) to rinse out (either cups &c., or clothes after soaping).
- چايناتماق *châina-'t-mak* (v. caus.) to cause to masticate.
- چايناشماق *châina-'sh-mak* (v. recip.) to masticate together.
- چايناماك *châina-mak* (v. tr.) to masticate, to munch.
- چپ *chap* (adj.) left [hand], P.
- چپاڭاي *chapaghai* } (adj. and adv.) left-handed; with the left
- چپاڭاي *chapaqai* } hand, P. T.
- چپه *chappa* (subs.) sewing-cotton.
- چخ *chakh* (subs.) a spinning wheel, a water-wheel. [For *charkh*, P.]
- چراغ *chiragh* (subs.) a lamp, P.
- چراي *chirai* (subs.) countenance, appearance. [? For *chchrah*, P.]

- چرايسيز *chirai-siz* (adj.) ugly, ill-favoured.
 چرايسيزليق *chirai-siz-liq* (subs.) ugliness.
 چرايلىق *chirai-liq* (subs. and adj.) beauty, handsomeness; also, well-favoured, good-looking, P. T.
 چرخ *charkh* (subs.) a wheel, a grind-stone, spinning wheel, &c., P.
 چرخلاماق *charkh-la-maq* (v. tr.) to grind (on a turning grind-stone).
 چرك *chirk* (adj.) rotten. [another.
 چرايشماق *chirla-'sh-maq* (v. recip.) to call one another, to invite one
 چرايماق *chirla-maq* (v. tr.) to call, to invite, to summon.
 چقارتماق *chiq-dr-'t-maq* (v. redup. caus.) to cause to take out.
 چقارشماق *chiq-dr-'sh-maq* (v. caus. recip.) to take out together.
 چقارماق *chiq-dr-maq* (v. caus.) to cause to go out, i. e., to take out, to send out, to expel.
 چقماق *chiq-maq* (v. intr.) to go out.
 چكمان *chak-man* (subs.) coarse woollen or cotton stuff.
 چكن *chakan* (subs.) embroidery, P.
 چكلىك *chig-il-mak* (v. pass.) to be knotted.
 چكلىك *chig-mak* (v. tr.) to knot, to tie in a knot.
 چكنكاك *chigin-gak* (adj.) given to backing (of a horse).
 چكنماق *chigin-mak* (v. intr.) to back (of a horse), to retire, to retreat.
 چو *chchu*, (interj.) used for making a horse move forward.
 چو *Chu* (prop. name) a river running from near the Issik-kúl (Lake) north of the Kara Tagh Range.
 چوب *chub* (subs.) sweepings, KAZ.
 چوبۇق *chübuq* (subs.) a rod [? P. *chäbuq*]; also, the piece of cloth let in to the side of the skirt of a robe to give it fullness.
 چوپچاك *chupchak* (subs.) a story, a tale, KAZ.
 چوپچۇق *chupchuq* (subs.) a sparrow, KAZ.
 چوپور *chupur* (subs.) goat's hair.
 چوت *chot* (subs.) a small adze, KAZ.

- چونا *chotâ* } (subs.) coarse white cotton cloth.
 چوتار *chotâr* }
 چوتور *chôtur* (adj.) marked with small-pox.
 چوجا *chûja* } (subs.) a chicken, a chick.
 چوچا *chûcha* }
 چوچاك *chuchak* (subs.) a story, a tale.
 چوچقا *chochqa* (subs.) a pig, KAZ.
 چوچوك *chûchûk* (adj.) savoury, nice-tasting, not sour.
 چورتان *chortân* (subs.) a sort of fish with a snout resembling a duck's bill.
 چورگولناماك *churgul-'t-mak* (v. caus.) to cause to go round.
 چورگولشماك *churgul-'sh-mak* (v. recip.) to go round together.
 چورگولماك *churgul-mak* (v. intr.) to go round, to revolve, to rotate.
 چوره *chaurah* (adj.) round, disk-like. Same as *châurah*.
 چوروتماك *chürü-'t-mak* (v. caus.) to cause to rot.
 چوروزق *choruq* (subs.). The same as *charoq*.
 چوروك *chürü'k* (adj.) rotten.
 چوروماك *chürü-mak* (v. intr.) to rot, to become corrupt.
 چوري *chori* (subs.) a female slave.
 چوغول *chughul* (adj.) slandering, making mischief.
 چوغول لوق *chughul-luq* (subs.) slander, mischief-making.
 چوق *choq* (subs.) a tassel, KAZ.
 چوق *choq* (adj. and adv.) many, much; also, very.
 چوق *choq* (subs.) a hot ember.
 چوقا *choqa* (subs.) the back of the head.
 چوقماق *choqmaq* (subs.) a mace, a weapon formed of a handle with a heavy head attached to it rigidly.
 چوقوتماق *choqu-'t-maq* (v. caus.) to cause to peck.
 چوقور *chuqur* (subs.) a pit, a depression.
 چوقور *choqur* (adj.) marked or pitted with small-pox.
 چوقوشماق *choqu-'sh-maq* (v. recip.) to peck one another.
 چوقوماق *choqu-maq* (v. tr.) to peck.
 چوكا *choka* (subs.) chop-sticks for eating Chinese fashion.

چوکارناما *chuk-ar-'t-mak* (v. caus. redup.) to cause to make (a camel) to lie down, to order (a camel) to be made to lie down.

چوکارشماک *chuk-ar-'sh-mak* (v. caus. recip.) to cause (camels) to lie down in company, to make a number of camels lie down.

چوکارماک *chuk-ar-mak* (v. caus.) to cause to sink, to cause (camels) to lie down.

چوکان *chokan* (subs.) a young woman who has not borne a child. Same as *chāukan*.

چوکتورماک *chuk-tur-mak* (v. caus.). The same as *chuk-ar-mak*.

چوکماک *chuk-mak* (v. intr.) to sink (in water), to lie down (of a camel).

چوکرماک *chuk-ur-mak* (v. caus.). The same as *chuk-ar-mak*.

چول *chul* (subs. and adj.) an arid place; arid.

چولاق *chulāq* (adj. and subs.) maimed, mutilated, armless, handless; a man who has lost a hand or arm, &c.

چولان *chulan* (subs.) cooked rations.

چولپان *cholpan* (subs.) the morning star (seen in summer).

چولغاتماک *chulgha-'t-maq* (v. caus.) to cause to wind.

چولغاشماک *chulgha-'sh-maq* (v. recip.) to wind in company.

چولغاماک *chulgha-maq* (v. tr.) to wind, to roll up, to entwine.

چولغانماک *chulgha-'n-maq* (v. refl.) to twine itself.

چوللاتماک *chul-la-'t-mak* (v. caus.) to cause to be thirsty, &c.

چوللاشماک *chul-la-'sh-mak* (v. recip.) to be thirsty together, &c.

چوللاماک *chul-la-mak* (v. intr.) to be thirsty, to become thirsty, to dry up, to talk one's self hoarse (or dry) [from *chul*], KH.

چوم *chom* (subs.) a camel's pack-saddle, KAZ.

چوماق *chomaq* (subs.) a mace. [See *choq-maq*.]

چومالی *chumali* (subs.) an ant.

چومچوق *chumchug* (subs.) a sparrow.

چومدورماق *chum-dur-māq* (v. caus.) to cause to duck, to make (any one) take a dip (by word or gesture).

چومباق *chum-māq* (v. intr.) to duck (one's self under water), to take a dip, to dive.

- چوموچ *chumüch* (subs.) a wooden ladle, P.
 چومورماق *chum-ur-mâq* (v. caus.) to cause to duck, to dip, to duck (actively).
 چومولماق *chum-ul-mâq* (v. pass. with refl. sense) [literally, to be ducked], specially, to bathe, to dip one's self.
 چوناك *chundq* (adj. and subs.) having lost an ear; one who has lost an ear.
 چوناك *chunak* (subs.) a furrow for irrigation separating the several beds in a garden.
 چونتاك *chuntak* (subs.) a pocket in the skirt of a robe.
 چونغ *chung* (adj.) great, large, big.
 چونغقايتماق *chungqai-'t-maq* (v. caus.) to cause to squat.
 چونغقايشماق *chungqai-'sh-maq* (v. recip.) to squat together.
 چونغقايتماق *chungqai-maq* (v. intr.) to squat (with the knees near the face, like the natives of India).
 چوروتماق *chûwar-'t-mak* (v. caus.) to cause to invert.
 چوروزماق *chûwar-mak* (v. tr.) to throw over, to invert, to reverse, to turn over (entirely), to turn round (on to the opposite direction).
 چوروزشماق *chûwar-ush-mak* (v. recip.) to invert together.
 چوروزلماق *chûwar-ul-mak* (v. pass.) to be inverted, to be turned round.
 چويان *chuyan* } (subs.) pig-iron, also cast-iron.
 چويون *chuyun* }
 چه *chah* an affix implying extent or amount; also, fashion. [See Gram. under "adverbs" and "post-positions" and "formation of adjectives." Also see under *chîn*, below.]
 چيان *chiân* (subs.) a scorpion. Same as *châyân*.
 چيبار *chibar* (adj.) skilled, skilful, KAZ.
 چيبيق *chibiq* (subs.) a rod, a wand. [See *chubug*.]
 چيبين *chibin* (subs.) a fly, a house-fly.
 چيبيلدوق *chibilduq* (subs.) a curtain stretched across a room, dividing it into two.

چېپ *chep* (subs.) an intrenchment, an earth-work (to protect guns or troops).

چېت *chit* (subs.) a border, an edge, a frontier.

چیتان *chitan* (subs.) a rough paling made of crossed sticks.

چیت *chitt* (subs.) a thorn fence, thorns stuck on the top of a wall.

چیت *chitt* (subs.) printed calico, chintz.

چېچا *chicha* (subs.) mother, KAZ.

چېچاک *chichak* (subs.) a flower; also, small-pox.

چېچان *chichan* (adj.) eloquent, persuasive, KAZ.

چېچان لیک *chichan-lik* (subs.) eloquence, KAZ.

چیدا تاق *chida-'t-maq* (v. caus.) to cause to last.

چیدا شاق *chida-'sh-maq* (v. recip.) to last together.

چیدا ماق *chida-maq* (v. intr.) to last, to endure.

چیدا امسیر *chida'm-siz* (adj.) not lasting, unenduring, impatient.

چیدا م لیک *chida'm-liq* (adj.) enduring, lasting, patient.

چیرا ناک *chiran-mak* (v. intr.) to make an effort (physical), to strain at any task, to groan or grunt over a hard task; to sit back in the saddle with one's feet well forward.

چیرا یلوق *chirai-luq* (adj.) handsome, good-looking.

چیرکین *chirkin* (adj.) dirty, KAZ.

چیرلا تاق *chirila-'t-maq* (v. caus.) to cause to call.

چیرلا شاق *chirila-'sh-maq* (v. recip.) to call one another.

چیرلا ماق *chirila-maq* (v. tr.) to call, to summon.

چیرما تاق *chirma-'t-maq* (v. caus.) to cause to wind, to cause to twine.

چیرماش *chirmash* (adj.) entangled.

چیرماش تورماق *chirma'sh-tur-maq* (v. recip. caus.) to cause to be entangled, to entangle, to intertwine.

چیرماش شاق *chirma'sh-ish-maq* (v. recip. redup.) to be entangled together, to be intertwined.

چیرماشاق *chirma'sh-maq* (v. recip.) to wind or twine in company; to be entangled.

چیرما مالق *chirma-'l-maq* (v. pass.) to be wound, to be twined.

چيرماق *chirma-maq* (v. tr.) to wind (irregularly), to twine.

چيرماق *chirma-ug* (subs.) a creeper which winds itself round trees
(dying down in winter).

چيرورتماق *chirü-'t-mak* (v. caus.) to cause to rot.

چيروماق *chirü-mak* (v. intr.) to rot.

چيريك *chirik* (subs.) an army, a force.

چيريلاتماق *chiril-la-'t-maq* (v. caus.) to cause to chirp.

چيريلاشماق *chiril-la-'sh-maq* (v. recip.) to chirp or chirrup in chorus.

چيريلاماق *chiril-la-maq* (v. intr.) to chirp, to chirrup, to twitter (like young birds).

چيزا *chiza* (subs.) a measure of length (two spans of fore-finger and thumb) [now identified with the half of the *alchin* (Russian "arschine") which is about 28 inches].

چيزدورماق *chiz-dur-maq* (v. caus.) to cause to draw lines.

چيزشماق *chiz-ish-maq* (v. recip.) to draw lines in company.

چيزماق *chiz-maq* (v. tr.) to draw a line or lines, to score.

چيزيق *chiz-ig* (vl. subs.) a line, a score.

چيغ *chigh* (subs.) a reed used for making baskets and mats; also a chick (Indian screen).

چيغرتماق *chighartmaq* (subs.) a coarse kind of grass growing in bunches which grazing animals will not touch.

چيغريق *chighariq* (subs.) a machine for cleaning cotton of its seeds, by passing it between two rollers one of iron and one of wood.

چيغين *chighin* (subs.) expense, KAZ.

چيقي *chiq* (subs.) dew.

چيقارتماق *chiq-ar-'t-maq* (v. caus. redup.) to cause to make to go out, to cause to take out.

چيقارشماق *chiq-ar-'sh-maq* (v. caus. recip.) to cause to go out in company.

چيقارماق *chiq-ar-maq* (v. caus.) to cause to go out, to take out, to expel.

چيقان *chiqan* (subs.) a red eruption on the body.

- چىقماق *chiq-maq* (v. intr.) to go out.
 چىقىم *chiqim* (subs.) expense, expenditure.
 چىكا *chika* (subs.) the temple (of the head).
 چىكام *chikam* (subs.) embroidery.
 چىكماك *chik-mak* (v. tr.) to embroider.
 چىكماك *chik-mak* (v. tr.) to smoke.
 چىكمان *chikman* (subs.) coarse cloth. The same as *chakman*.
 چىگا *chigs* (subs.) vegetable fibre; a kind of wild hemp; also, a rope made of the same.
 چىگماق *chig-mak* (v. tr.) to knot, to tie in a knot.
 چىگورتكا *chigörtka* (subs.) a locust, a grasshopper.
 چىگىت *chigit* (subs.) cotton seed.
 چىگىتاك *chigitak* (subs.) the refuse of fat left after boiling.
 چىلان *chilan* (subs.) a brown berry with a stone in it, not unlike the Indian *bér*.
 چىلبور *chilbur* (subs.) a picketing rein, attached to a horse's head-stall.
 چىلپولاتماق *chilpul-la-'t-maq* (v. caus.) to cause to sound by splashing.
 چىلپولاتماق *chilpul-la-'sh-maq* (v. recip.) to sound of splashing in several directions at once.
 چىلپولاتماق *chilpul-la-maq* (v. intr.) said of the sound of the splashing of water; to make a sound of splashing.
 چىلپىق *chilpiq* (subs.) weakness and running of the eyes.
 چىلتاك *chiltak* (subs.) a fancy edging to a garment.
 چىلیم *chilim* (subs.) a hookah, a hubble-bubble [made of a hollowed gourd to contain the water, in Eastern Turkistân].
 چىم *chim* (subs.) a sod, a turf.
 چىمچىق *chimchiq* (subs.) a sparrow.
 چىمچىلاتماق *chimchi-la-'t-maq* (v. caus.) to cause to pinch.
 چىمچىلاتماق *chimchi-la-'sh-maq* (v. recip.) to pinch one another.
 چىمچىلاق *chimchilaq* (subs.) the little finger; *chimchilâq ana-si* 'the ring-finger' literally 'little finger's mother.'

چیمچیلماق *chimchi-la-maq* (v. tr.) to pinch (with the fingers, repeatedly).

چیمچیماق *chimchi-maq* (v. tr.) to pinch (once), to give a pinch.

چین *chin* (adj.) true, trustworthy.

چین *chin* (subs.) amount, extent, measure [the probable origin of the affix *chah* (which see). This latter is pronounced by the Kazzaks *chain* (as *tiz-ga-chain* for *tiz-ga-chah*); this forms a link to connect the two].

چیناتماق *chin-a-'t-maq* (v. caus.) to cause to tighten.

چیناتماک *chin-a-'t-mak* (v. caus.) to cause to measure.

چیناشماق *chin-a-'sh-maq* (v. recip.) to tighten in company.

چیناشماک *chin-a-'sh-mak* (v. recip.) to measure in company.

چیناماق *chin-a-maq* (v. tr.) to tighten, to brace up.

چینا ماک *chin-a-mak* (v. tr.) to measure, to estimate, to reckon (size or extent) [distinguished from *chagh-la-maq* which refers to numbers].

چینگ *ching* (adj.) strong, firm, tight, hard.

چینگقاماق *ching-ga-maq* (v. tr.) to tighten, to brace up. Same as *china-maq*.

چینگقزتماق *chinggar-'t-maq* (v. caus.) to cause to scream.

چینگقزماق *chinggar-maq* (v. intr.) to scream, to squall.

چینگلاتماق *ching-la-'t-maq* (v. caus.) to cause to sharpen by hammering.

چینگلاشماق *ching-la-'sh-maq* (v. recip.) to sharpen together by hammering.

چینگلاماق *ching-la-maq* (v. tr.) to sharpen by hammering (cold) [as a horse shoe-nail before shoeing].

چین لاتماق *chin-la-'t-maq* (v. caus.) to cause to speak truth.

چینلاشماق *chin-la-'sh-maq* (v. recip.) to speak truth to one another, to become in earnest with one another.

چینلاماق *chin-la-maq* (v. intr.) to speak truth, to speak in earnest, to get angry.

چینی *chini* (subs.) china, porcelain; specially a china cup.

چیان *chīyan* (subs.) a scorpion. The same as *chāyan*.

ح

حیت *hāit* (subs.) a festival, *Eed*. [Corr. A.]

حیت لیک *hāit-lik* (subs.) things prepared for the celebration of the festival; also, presents given at the festival.

خ

خاتون *khātun* (subs.) a woman, a wife, P. (?)

خادا *khāda* (subs.) a long stake or post.

خارخشه *khārkhāshāh* (subs.) bother, worry.

خاسه *khāsah* (subs.) calico, shirtings.

خاسه لیک *khāsah-lik* (adj.) particular, special, P. T.

خانا *khāfā* (adj.) annoyed, displeased, troubled. [Corr. P.]

خانالاماق *khāfa-la-'t-maq* (v. caus.) to cause to annoy.

خانالاشماق *khāfa-la-'sh-maq* (v. recip.) to annoy one another.

خانالاماق *khāfa-la-maq* (v. tr.) to annoy, to vex.

خانالانماق *khāfa-la-'n-maq* (v. pass. and refl.) to be annoyed; to vex one's self.

خانالایق *khāfa-liq* (subs.) displeasure, annoyance, P. T.

خالا *khāla* (subs.) a maternal aunt, P.

خالانماق *khā-la-'t-maq* (v. caus.) to cause to desire.

خالاشماق *khā-la-'sh-maq* (v. recip.) to desire together, to desire one another, or, of one another.

خالاماق *khā-la-maq* (v. tr.) to desire, to wish for, P. T. [*khā* for *khwāh*].

خالی *khālta* (subs.) a bag, P.

خام *khām* (adj.) unripe, raw (in all senses), crude, unfashioned, unlaboured, P.; hence (subs.) cloth made of coarse single threads of cotton.

- خامان *khâman* (subs.) a threshing-floor or ground (where corn is trodden out); reaped corn collected for threshing, P. [for *khirman*].
- خاملاتماق *khâm-la-'t-mâq* (v. caus.) to cause to unravel, (tr.).
- خاملاشماق *khâm-la-'sh-mâq* (v. recip.) to unravel in company.
- خاملاماق *khâm-la-mâq* (v. tr.) to unravel, P. T.
- خاملوق *khâm-lûq* (subs.) immaturity, rawness.
- خان *khân* (subs.) king, prince; also used in Kâshghar as an ending for the names of women (not of men as in India) as: *Âi Khân* ("moon princess"), *Mâiram Khân* ("lady Mary").
- خان اريق *Khân-ariq* (prop. name) a canal some fourteen miles south of Kâshghar, derived from the Tazghun River; also a district and town irrigated by it. [Literally the *Khân's* canal.]
- خبر *khābar* (subs.) news, intelligence, information, P.
- خبرلانماق *khābar-la-'t-mak* (v. caus.) to cause to inform.
- خبرلاشماق *khābar-la-'sh-mak* (v. recip.) to inform one another.
- خبرلاماق *khābar-la-mak* (v. tr.) to give news, to inform [with the person in *ga*, and the news in the accusative], P. T.
- خبرلانماك *khābar-la-'n-mak* (v. pass. and refl.) to be informed; to inform one's self.
- خرخر *khār-khār* (adj.) inarticulate, indistinct in utterance.
- خررات *kharrat* (subs.) a carpenter.
- خرراک *khurrak* (subs.) a snore. [floor, P.]
- خرمن *khirman* (subs.) corn collected for threshing; a threshing-
- خري *khari* (subs.) the main beam of a (flat) roof, [on which the lesser cross beams from either wall rest on their ends]. (Cf. Hind. *karri* = beam.)
- خواجه *khwāja* (subs.) a title applied to the offspring of a Sâiyad by a woman of any other family, also to their descendants. Also, used as a mere term of honour for addressing a superior, like "Sir," generally pronounced *khōja*.

- خوتوك *khutuk* (subs.) a young ass.
- خوتون *khutun* (subs.). For *khātun* (which see).
- خوجه *khoja* (subs.). For *khwāja* (which see).
- خورجین *khurjīn* (subs.) a saddle bag (double, so as to fit on each side of the horse's back), P.
- خورلیق *khur-liq* (adj.) base, contemptible. [From *khwār*, P.]
- خورولانماق *khurul-la-'t-maq* (v. caus.) to cause to snore.
- خورولانماق *khurul-la-maq* (v. intr.) to snore.
- خوش *khush* (adj. and adv.) happy, well, P.
- خوشامت *khush-āmat* (subs.) syeophancy, obsequiousness, P.
- خوشلانماق *khush-la-'t-maq* (v. caus.) to cause to make happy.
- خوشلاشماق *khush-la-'sh-maq* (v. recip.) to please one another, to please several people; to wish one another farewell.
- خوشلاماق *khush-la-maq* (v. tr.) to make happy, to please.
- خوشلانماق *khush-la-'n-maq* (v. pass. and refl.) to be made happy; to please one's self.
- خوشیاقماس *khush-yaq-mas* (adj.) unwilling, lazy.
- خوشیاقماق *khush-yaq-maq* (v. intr.) to be agreeable (of an action), to be willing (of the agent). [Little used in Eastern Turkistân.]
- خوم *khum* (subs.) a large earthenware vessel.
- خومار *khumār* (subs.) illness or *mal-aise* resulting from the giving up of stimulants or narcotics; also, headache after drinking.
- خوماری *khumāri* (adj.) ill from giving up drink or drugs, or from the excessive use of them.
- خون *khun* (subs.) blood-money, satisfaction for the death of any one [from *khun* = blood, P.].
- خونگان *khungan* (subs.) a cucumber.
- خیرا *khira* (adj.) dim; *közi khira* = dim-eyed, *i. e.* short-sighted.
- خیریلانماق *khiril-la-maq* (v. intr.) to speak indistinctly or hoarsely (as from the effect of a goitre).
- خینا *khina* (subs.) the dye called 'henna'. [Corr. A.]



- دا *da* (post-pos) at, in (used where motion is not implied).
- داب *dab* (participle). For *dep* "having said", from *dé-mak*.
- داب *dab* (subs.) a spring forwards, [only used in composition, as *dab-birmak* to spring forwards, to dart forwards].
- دابا *daba* (subs.). For *dāwa*.
- دادا *dāda* (subs.) father. *Ugāi dāda* = step-father.
- دار *dār* (subs.) a gallows, a clothes-line (for drying clothes), P.
- دارو *dāru* (subs.) medicine, drugs, spices; gunpowder.
- داغ *dāgh* (subs.) grief, sorrow; also P., an indelible mark.
- داغا *daghā* (subs.) deception, cheating, P.
- داغاباز *daghā-bāz* (adj.) deceitful, cheating, P.
- داغلانماق *dagh-la-'t-maq* (v. caus.) to cause to brand.
- داغلاشماق *dagh-la-'sh-maq* (v. recip.) to brand together. [P. T.]
- داغلاماق *dāgh-la-maq* (v. tr.) to mark indelibly, to brand, to tattoo,
- داغلانماق *dāgh-la-'n-maq* (v. pass. and refl.) to be branded, to brand one's self.
- داک *dak* (advl. affix). For *dik*.
- دالان *dālan* (subs.) an inner gateway [dividing the outer premises to which men have access from the inner courtyard in which are the women's apartments. It is formed of a kind of hall or passage with two doors, not opposite one another, so that no one can see into the inner yard, even when the doors are open].
- دالو *dalū* (subs.) a shoulder-blade, the shoulder.
- دانگ *dang* (subs.) a serai frequented by the poorer class of travellers, CH.
- دانگ *dang* (subs.) renown.
- داو *dao* (subs.). For *dāwa*.
- داو *dao* (subs.) a stake laid by a looker-on at a game.

- دارا *dāwa* (subs.) a claim, a lawsuit. (Corr. A.)
 دوا *dawā* (subs.) medicine. (Corr. A.)
 دوان *dawān* (subs.) a pass (over mountains).
 داوراماق *dāura-'t-maq* (v. caus.) to cause to mimic.
 داوراشماق *dāura-'sh-maq* (v. refl.) to mimic one another.
 داوراماق *dāura-maq* (v. tr.) to mock, to mimic, to imitate.
 داوروق *dāuruq* (subs.) a clamour, a hullabaloo.
 داورش *dāush* (subs.) noise.
 دارشلاماق *dāush-la-'t-maq* (v. caus.) to cause to make a noise.
 دارشلاشماق *dāush-la-'sh-maq* (v. recip.) to make a noise together, or to one another.
 دارشلاماق *dāush-la-maq* (v. tr.) to make a noise.
 دای *dāi* (advl. affix). For *dak* or *dik*, Каз.
 дайин *dāyin* (advl. affix). For *dak* or *dik*, КН.
 درحال *dar-hāl* (adv.) at once, on the spot, P. (literally, in the condition of affairs).
 درراو *dar-rao* (adv.) while in the act, immediately, P.
 درک *darak* (subs.) cognizance, perception (concrete), *darak tāp-tim* "I have become aware," P. [work].
 درکار *dar-kār* (adj.) necessary, required, P. (literally, in the
 درکارلیق *dar-kār-liq* (subs.) a necessary, a requisite, P. T.
 درکلاماک *darak-la-'t-mak* (v. caus.) to cause to inquire.
 درکلاشماق *darak-la-'sh-mak* (v. recip.) to inquire of one another, or together.
 درکلاماک *darak-la-mak* (v. tr.) to inquire, to endeavour, to become cognizant.
 دزمال *dazmal* (subs.) a flat iron (for smoothening linen).
 دسترخان *dastar-khān* (subs.) a table-cloth (spread on the floor for eating); also, what is placed thereupon, a spread, a feast. [The *dastar-khān* is quite an institution in Turkistān, hospitality requiring that one should be put before a guest on every possible occasion quite regardless of regular meal-times. First bread, fruit and sweetmeats

are put on the cloth, afterwards meat *entrées* of different kinds, then huge dishes of *pilao*, and then cups full of soup.] (For *dastár-khwán*), P.

دسترخانیچی *dastar-khán-chi* (subs.) the chief servant who lays the cloth and puts the dishes on it, one by one, taking them from the hands of the other attendants. Also, an officer at the Court of Khokand who enjoys the revenues of a certain district subject to the duty of providing the requisites for the *Khán's* guests.

دستک *dastak* (subs.) a written order of any one in authority, P.

دستمال *dast-mal* (subs.) a handkerchief, a towel, P.

دستورخان *dastur-khán* (subs.). For *dastar-khán*.

دسلاб *daslab* (subs.) beginning, commencement.

دسمال *dasmal* (subs.). For *dast-mal*, P.

دسمایه *dasmáya* (subs.) capital (of money) [for *dast-máya*], P.

[As rigid Musalmáns consider it wrong to receive interest on their capital, they arrange as follows: they advance a certain sum to the borrower who is considered their trading agent; of the profit that accrues (after deduction and repayment of the capital) two-thirds go to the capitalist and one-third to the borrower (the latter having deducted his own cost of maintenance meanwhile out of the undivided profit). Another arrangement is that the capitalist takes only half the profits, but the agent or borrower bears his own expenses. Losses are borne, on the second plan by both in the proportion of 2 to 1; and on the first plan by the capitalist.]

دم *dam* (subs.) breath, steam, P.

دمالدورمات *dam-ál-dur-máq* (v. caus.) to cause to take breath.

دمالشیاق *dam-ál-ieh-máq* (v. recip.) to take breath, or rest, together; or in turns.

دمالبات *dam-ál-máq* (v. intr.) to take breath, to rest, P. T.

دمبورا *dambura* (subs.) a two-stringed guitar, KAZ.

دملاتماک *dam-la-'t-mak* (v. caus.) to cause to cook by steam.

دملاشماک *dam-la-'sh-mak* (v. recip.) to steam together; also, for *dam-al-ish-mak*, in the sense of rest by turns in any task, to work 'in tie,' to carry by turns.

دملماک *dam-la-mak* (v. tr.) to steam, to cook in steam [by shutting the top of the vessel, as with a tea kettle; or by placing the pastry, &c. to be cooked, on a wooden grating fixed some distance above the surface of boiling water in the inside of a large closed vessel].

دن *dan* (post-pos.) from, than.

دنیا *dunyâ* (subs) the world; also, wealth, riches, A.

دنبادار *dunyâ-dâr* (adj.) wealthy, rich, A. P.

دوبه *duba* (subs.) a mound, a hillock. Same as *tipah*.

دوتار *du-târ* (subs.) a two-stringed lute [*du-târ* as distinguished from *si-târ* = "three-stringed," a guitar], P.

دور *dur* Present auxiliary tense (see Grammar under "Verbs"). Probably a corruption of *turur* (which often occurs in its place in old writings) the Present Future of *tur-mak* "to stand."

دوري *dauri* (subs.) rule, reign, the time of any king's rule, P.

دوشه *dusha* (subs.) a board for chopping meat on.

دول *dul* (adj.) hump-backed.

دولان *Dolan* (prop. name) the plains of the Yarkand River from two marches east of Yarkand to within some seven marches of Aksu; also, their inhabitants. They are great reverers of the saintly family of the Kâshghar Khojas.

دولت *daulat* (subs.). For *dâulat* (which see).

دول *döl* (subs.) the funnel-shaped feeder of a mill.

دولي *doli* (subs.) the shoulder-blade, the shoulder [for *dâlu*].

دومباق *dumbâq* (subs.) a drum.

دون *dawan* (subs.) a pass over a mountain range [for *dawân*].

دونان *dunan* (adj.) two-year-old.

دونبول *dunbul* (adj.) unripe (of corn). [in Central Asia].

دونبه *dunba* (subs.) a broad sheep's tail (of the sort common

دونگ *dung* (subs.) rising ground.

ديب *deb* [pronounced *dip*] (part.) having said, saying. [This closes almost every quotation or even statement of what passed in the mind of any one, answering nearly to our "that" at the beginning. E. g. *barđi dip kupti* "he arose that he might go" (literally "let me go, so saying, he arose"); *shubu dip tunudim* "I recognised that it (was) he" (literally "he, so saying, I recognised").]

ديپساتماک *dipsa-'t-mak* (v. caus.) to cause to tread down.

ديپشماق *dipsa-'sh-maq* (v. recip.) to tread down together.

ديپساماک *dipsa-mak* (v. tr.) to tread down, to tread in.

ديداک *dédak* (subs.) a female slave.

ديدرماک *dé-dur-mak* (v. caus.) to cause to say.

ديساکچي *désak-chi* (subs.) a night watchman.

ديک *dik* (adjl. and advl. affix) like; similarly to. [This is affixed to words or even subordinate sentences; governing generally the genitive of pronouns, the future participle of verbs, but the simple radical of other words.] (? Verbal form from *dé-mak* "to say", *dek* "what is spoken", *quasi* "so to speak;" as *pitik* "what is written", from *pit-mak* "to write".)

ديگوچي *dé-gu-chi* (subs.) a speaker, one who says [from the fut. part. of *dé-mak*].

ديماک *dé-mak* (v. tr.) to say.

دين *din* (post-pos.) from, than. [cant, a dervesh, a beggar, P.

ديوانه *diwána* (adj. and subs.) mad; a madman; also, a mendi-



رابت *rabat* (subs.) a rest-house.

راباق *rabag* (subs.) a palace, the private dwelling of a Ruler, [for *rawaq*, A.].

- راس *rās* (adj.) straight, right [for *rāst*, P.].
 راسلنام *rās-la-'t-māq* (v. caus.) to cause to discharge (a payment).
 راسلشماق *rās-la-'sh-māq* (v. recip.) to discharge together.
 راسلاماق *rās-la-māq* (v. tr.) to complete a number, to discharge a payment, to set right, to set in order. (?) P. T.
 رمبال *rambal* (subs.) a soothsayer, P.
 رنگ *rang* (subs.) colour, appearance, species, P.
 رنگلانماق *rang-la-'t-mak* (v. caus.) to cause to dye.
 رنگلاشماق *rang-la-'sh-mak* (v. recip.) to dye together.
 رنگلاماق *rang-la-mak* (v. tr.) to colour, to dye, P. T.
 رنگلانماق *rang-la-'n-mak* (v. pass. and refl.) to be, or, become coloured; to assume a colour.
 رنگلانیشماق *rang-la-'n-ish-mak* (v. refl. recip.) to become coloured in company; to paint their faces in company (of women).
 رنگلیک *rang-lik* (adj.) coloured, bright coloured, handsome, P. T.
 روده پای *rudah-paī* (subs.) a persistent, or, importunate person; an incubus, an old man of the sea, P.
 روزا *rozah* (subs.) a fast, the month Ramazān, P.
 رومال *rumal* (subs.) a napkin, a towel, a handkerchief [from *ru* "face" and *malidan* "to wipe," P.].
 رویان *ruyan* (subs.) madder (a dye), КН. P.

ز

- ز *zā* (subs.) trouble, annoyance [for *iza*, A.].
 زاغ *zāgh* (subs.) a jackdaw.
 زاغچه *zāghchah* } (subs.). The same, КН.
 زاقچه *zāqchah* }
 زاغون *zaghun* (subs.) mustard [only used for extracting oil].
 زاماروق *zamaruq* (subs.) a root eaten cooked in milk [in Wakhan, Badakhshan, &c.].
 زغیر *zaghir* (subs.) linseed, flax (grown only for the oil).
 زمبرک *zamburak* (subs.) a gun, a piece of artillery.

- زنجیر *zanjir* (subs.) a chain, P.
 زنجیرلاتماک *zanjir-la-'t-mak* (v. caus.) to cause to put in chains.
 زنجیرلاشماک *zanjir-la-'sh-mak* (v. recip.) to chain together.
 زنجیرلاماک *zanjir-la-mak* (v. tr.) to chain, to put in chains, to chain up (as a door), P. T.
 زنجیرلانماک *zanjir-la-'n-mak* (v. pass.) to be enchained.
 زنگ *zang* (subs.) rust.
 زنگبرک *zangbarak* (subs.). The same as *zamburak*.
 زنگلانماک *zang-la-'t-mak* (v. caus.) to cause to rust, to allow to rust.
 زنگلاماک *zang-la-mak* (v. intr.) to rust, to become rusty.
 زور *zôr* (subs.) strength, force, violence, P.
 زورلاتماق *zôr-la-'t-mâq* (v. caus.) to cause to use force, or, violence.
 زورلاشماق *zôr-la-'sh-mâq* (v. recip.) to use force together, to exert themselves together, or, against one another.
 زورلاماق *zôr-la-mâq* (v. tr.) to use force to, to use violence to, P. T.
 زورلیق *zôr-liq* (subs. and adj.) force, violence; strong, violent.
 زولان *zôlan* (subs.) fetters.
 زیریکتورماک *zerik-tur-mak* (v. caus.) to cause to be wearied, to cause irksomeness.
 زیریکیشماک *zerik-ish-mak* (v. recip.) to be wearied (of anything) together.
 زیریکماک *zerik-mak* (v. intr.) to be wearied, to feel (anything) irksome.
 زیغیر *zighir* (subs.). The same as *zaghir*.
 زیلچاق *Zilchaq* (prop. name) a small river or canal a few miles south of Yârkand.
 زیلچه *zilchah* (subs.) a long-pile carpet, a Turkey carpet.

س

- سا *sâ* (subs.) a kite [bird].
 ساباق *sabaq* (subs.) instruction, a lecture. [Corr. A.].
 ساپ *sâp* (subs.) the handle of an axe, spade, &c.

- ساپاق *sapaq* (subs.) the eye of a button (formed of wire).
 ساپاڭلاپاق *sapaq-la-maq* (v. tr.) to make an eye to a button.
 ساپماق *sap-maq* (v. tr.) to thread (a needle), to string (beads).
 ساپون *sapun* } (subs.) soap, A.
 سابون *sabun* }
 ساتتورماق *sat-tur-maq* (v. caus.) to cause to sell.
 ساتشماق *sat-ish-maq* (v. recip.) to sell together.
 ساتماق *sât-mâq* (v. tr.) to sell, to give in barter.
 ساتيپالماق *sât-ipâl-mâq* (v. tr.) to buy, [literally, to take by purchase].
 ساتيقسيز *sât-ig-siz* (vl. adj.) unsold.
 ساتيqliق *sât-ig-liq* (vl. adj.) sold.
 ساتيلماق *sât-il-mâq* (v. pass.) to be sold.
 ساج *sach* (subs.) a starling.
 ساج *sach* (subs.) hair of the head, Кн.
 ساچاق *sachaq* (subs.) a tassel. [For *chachaq*.]
 ساچقان *sachqan* (subs.) a rat, a mouse. Also, the name of one of the years of the Turki cycle.
 ساچتورماق *sach-tur-maq* (v. caus.) to cause to sow (seed).
 ساچشماق *sach-ish-maq* (v. recip.) to sow in company.
 ساچماق *sach-mâq* (v. tr.) to sow (seed). The same as *chachmaq*.
 ساچيلماق *sach-il-mâq* (v. pass.) to be sown.
 ساراتماق *sâra-'t-maq* (v. caus.) to cause to sing (as a bird).
 ساراشماق *sâra-'sh-maq* (v. recip.) to sing together (as birds).
 ساراغ *sârdagh* (vl. subs.) a bird's song.
 ساراماق *sâra-maq* (v. intr.) to sing [said only of birds]. For *sâira-maq*.
 سارانگ *sarang* (adj.) mad, insane.
 ساراي *sarai* (subs.) a caravansarai, a place in a town where traders with their cattle put up, P.
 سارت *Sârt* (prop. name) a term applied by the nomads (Kirghiz, Kazzaks, &c.) to dwellers in settled habitations, whether Turks or Tâjiks, i. e., whether Turanians or Iranians.

سارغارماق *sarigh-ar-maq* (v. intr.) to become yellow.

سارغایتماق *sarigh-ai-'t-maq* (v. caus.) to cause to become yellow.

سارغایشماق *sarigh-ai-'sh-maq* (v. recip.) to become yellow together.

سارغایماق *sarigh-ai-maq* (v. intr.) to become yellow.

سارغو *sarghu* (adj.) deaf.

ساری *sari* (advl. affix) as, in the measure of [after the Indefinite Verbal Substantive].

ساریغ *sarigh* } (adj.) yellow.
ساریق *sariq* }

ساریغارت *Sarigh-ot* (prop. name) literally 'yellow grass.' The name of a plain near the Karakoram.

ساریغ آیغور *Sarigh-Aighur* (prop. name) a place mentioned in the Tawarikh-i-Rashidi as in the direction of Lake Lob. There is at the present day a hill near Karashahr called Aighur-Taghi. This seems to have been the home of Uighurs [Aighur means "a stallion"].

ساریغ چوپان *Sarigh-Chopan* (prop. name) a stage on the road between Sariqol and Wakhan (nearest the latter). Mentioned in the Tawarikh-i-Rashidi, and by modern travellers.

ساریق قول *Sariq-qol* (prop. name) a wide valley and district on the east of Pamir in the dominions of Kâshghar. [Often spelt at the present day ساریقول *Sàriqol*.] The name is derived from *Sàriq* "yellow," and *qol* (which see), the Kirghiz name for a wide valley (distinguished from *jilgha* "a gorge"). The name has been wrongly supposed to be that of a Lake, after the manner of *Issigh-kül* اسیغ کول "Hot Lake," which is formed with *kül* "lake" (spelt with a different guttural and pronounced with a different vowel). *Sàriqol* is only one of a series of similar compounds, used in this region, and should not be divorced from them; e. g., *Sarigh-Chopan*, *Sarigh-Aighur*, *Sarigh-ot*, *Sàriqia*; on the other hand its second element is found again in *King-qol* "wide valley." See *qol*.

ساریقا *Sàriqia* (prop. name) literally, 'yellow slant.' Name of a part of the Qaraqash Valley.

ساز *sáz* (subs.) a marsh.

ساز *saz* (subs.) any musical instrument, P.

سازا *saza* (subs.) punishment, P.

سازان *sazan* (subs.) a species of fish, KAZ.

ساز لاتماق *sáz-la-'t-mâq* (v. caus.) to cause to tune.

ساز لاشماق *sáz-la-'sh-mâq* (v. recip.) to tune up together.

ساز لاماق *sáz-la-maq* (v. tr.) to tune, to bring into tune, P. T.

سازلیق *sáz-liq* (subs.) harmony (chiefly used metaphorically), P. T.

سایشماق *sâsi-'t-maq* (v. caus.) to cause to be putrid.

سایشماق *sâsi-'sh maq* (v. recip.) to be putrid together.

سایش *sâsigh* } (vl. adj.) putrid, stinking.

سایشیق *sâsiq* }

سایشیق *sâsigh-liq* (vl. subs.) putridity, stinkingness.

سایشماق *sâsi-maq* (v. intr.) to putrefy, to be putrid, to stink.

ساغ *sâgh* (subs.) wellness, happiness.

ساغداق *saghdaq* (subs.) a bow.

ساغراغو *saghraghu* (adj.) deaf.

ساغری *sâghri* (subs.) a leather prepared from horse-skin (from the back of the horse) [? shagreen].

ساغز *saghiz* (subs.) fine clay.

ساغزغان *saghizghan* (subs.) a magpie.

ساغلیق *saghliq* (subs.) a ewe.

ساغم *saghim* (subs.) mirage, distorted and magnified objects as seen through the heated atmosphere near the ground.

ساغماق *saghmaq* (v. tr.) to milk.

ساغو *saghu* (subs.) a wooden butt or pail.

ساغین *saghin* (adj.) giving milk, 'milch.'

ساغینیشماق *saghin-ish-maq* (v. recip.) to yearn for one another.

ساغینماق *saghin-maq* (v. tr.) to yearn for (a person).

سافال *safâl* (adj.) of earthenware.

سافاق *safâq*. For *sapak* (which see).

ساقلاماق *saŋq-la-maq*. For *sapaqlamaq*.

ساقماق *saŋ-maq*. For *sapmaq*.

ساق *saŋ*. For *sagh*.

ساقا *saŋa* (subs.) a playing marble.

ساقال *saŋal* (subs.) a beard.

ساقالدورق *saŋalduruq* (subs.) the throat-strap of a horse's head stall.

ساقايتماق *saŋ-ai-'t-maq* (v. caus.) to cause to be well or happy.

ساقايتماق *saŋ-ai-maq* (v. intr.) to be well or happy.

ساقلاتماق *saŋla-'t-maq* (v. caus.) to cause to be taken care of, to entrust.

ساقلاشماق *saŋla-'sh-maq* (v. recip.) to take care of one another.

ساقلاماق *saŋla-maq* (v. tr.) to take care of; also, to wait for.

ساقا *saŋa*. The same as *saŋa*.

ساكسان *saksan* (num.) eighty. [From *sakiz* "eight" and *un* "ten".]

ساكسانايان *saksan-aïlan* (num. subs.) a group of eighty.

ساكسانچي *saksan-inchi* (num. adj.) eightieth.

ساكساول *saksaul* (subs.) a sort of heavy wood which burns without wasting, retaining its shape until after it has become a glowing mass all through.

ساكيز *sakiz* (num.) eight.

ساكيزايان *sakiz-aïlan* (num. subs.) a group of eight.

ساكيزنچي *sakiz-inchi* (num. adj.) eighth.

سالبرانماق *salbira-'t-maq* (v. caus.) to cause to dangle, to cause to be of uneven length.

سالبراشماق *salbira-'sh-maq* (v. recip.) to dangle together, to be of uneven length together.

سالبراماق *salbira-maq* (v. intr.) to dangle (as a rope); to be of uneven length (as stirrups, or the two sides of a robe).

سالدورماق *sal-dur-maq* (v. caus.) to cause to throw.

سالشماق *sal-ish-maq* (v. recip.) to throw together.

سالغو *sal-ghu* (subs.) a sling, a throwing instrument.

سالقين *salqin* (adj.) cool, temperate, moderately warm.

- سالما *salma* (subs.) drift wood.
- سالماق *sal-maq* (v. tr.) to throw (gently), to throw off (as clothes), to pour, to put in, to lay out (as a wall, &c.).
- سالينچاق *salinchaq* (subs.) any thing put on as an ornament, *e. g.*, a necklace, &c.
- ساماوار *samavâr* (subs.) a tea-urn; Russian *samovar*.
- سامسا *samsa* (subs.) a small baked meat dumpling.
- سامسو *samsu* (subs.) a glazed cotton stuff, [now made in Khotan, but formerly imported from China], СШ.
- сан *sân* (subs.) total, amount; used by the Kazaks for ten krons (10,00,00,000).
- сан *sân* (subs.) the thigh.
- санатмац *san-a-'t-maq* (v. caus.) to cause to count.
- санац *sanach* (subs.) an entire goat skin used as a bag for flour, &c.
- санатмац *san-a-'sh-maq* (v. recip.) to count together.
- санац *sandagh* } (subs.) account, number.
санат *sandq* }
- саналмац *san-a-'l-maq* (v. pass.) to be counted.
- саналмац *san-a-maq* (v. tr.) to count, to reckon. [following].
- санжиг *sanjiq* (subs.) an acute pain in the stomach [from the
- санжигмац *sanji-mak* (v. tr.) to stab, to prick, to pierce, to spear.
- сандал *sandâl* (subs.) an anvil.
- сандуц *sandug* (subs.) a box. For مندوق P.
- сансиз *sân-siz* (adj.) countless, uncounted; also, of no account.
- санграг *sangraghu* (adj.) deaf.
- санграу *sangrau* (adj.) deaf, Kaz.
- сангулламац *sangul-la-mak* (v. intr.) to dangle, to hang loose.
- саратмац *saur-'t-maq* (v. caus.) to cause to winnow.
- сарушмац *saur-ush-maq* (v. recip.) to winnow in company.
- сарумац *saur-maq* (v. tr.) to winnow (grain).
- сарурмац *sauru-maq*. The same.
- саргат *saughat* (subs.) a present, a keepsake, P.
- сароц *sadq* (adj.) cold, [in form derived from *sad-maq*].

- سارئلوق *sarē-luq* (subs.) cold, coldness.
 سارئلماق *sarē-'t-maq* (v. caus.) to cause to be cold, to cool (tr.).
 سارئلماق *sarē-'sh-maq* (v. recip.) to be cold together.
 سارماق *sar-maq* (v. intr.) to be cold, to become cold, to cool (intr.).
 ساي *sāi* (subs.) a desert plain; *sāi-kūk* "a desert gazelle."
 ساي *sāi* (subs.) a gorge, a ravine, a river-bed, KAZ.
 سايلاق *saydāq* (subs.) a mare which will not consort with the herd, KAZ. Also, the name of a Kirghiz tribe.
 سايلاق *sāi-laq* (adj.) desert, barren.
 سايلئلماق *sāi-la-'t-māq* (v. caus.) to cause to select.
 سايلئلماق *sāi-la-'sh-māq* (v. recip.) to select together.
 سايلئلماق *sāi-la-māq* (v. tr.) to select, to pick out.
 سايلئلماق *sāi-la-'n-māq* (v. pass.) to be chosen, or selected.
 سايلماق *sāi-maq* (v. tr.). For *sanjimak*, KIRGIZ.
 سباق *sabaq* (subs.) instruction. (Corr. A.)
 سباق *sapaq* (subs.). The same as سايلاق.
 سپاي *sipāi* (subs.) a soldier. For *sipahi*, P.
 سپورئلماق *sipur-'t-mak* (v. caus.) to cause to sweep.
 سپورئلماق *sipur-mak* (v. tr.) to sweep.
 سپورگي *sipur-gi* (subs.) a broom, a brush.
 سپيل *sapil* (subs.) a fortification, a battlement. For *safil*.
 ست *sat* (adj.). ugly.
 سئلماق *süt-maq* (v. tr.) [prond. almost *sit-maq*] to extrude the contents of an egg, the brain, &c.
 سئلئلماق *süt-il-maq* (v. pass.) to be extruded, to ooze out.
 سچوک *sachuk* (adj.) sweet-toned.
 سراي *sarai* (subs.) a rest-house for travellers in a town, P.
 سرباز *sar-bāz* (subs.) an infantry soldier [literally "one who stakes his head,"] P.
 سرياي *sarpoi* (subs.) a full dress of honour (including turban or cap, robe and boots). For *sar-o-pai*, P.
 سرجي *sür-chi* [prond. almost *sirchi*] (subs.) a painter and gilder, a painter of patterns on a wall.

سردار *sardâr* (subs.) a high officer charged with some particular employ, P.

سردورماک *sür-dür-mak* (v. caus.) to cause to purge (as a draught).

سرکا *sirka* (subs.) vinegar, P.

سرکار *sarkâr* (subs.) an official (of great or small degree) charged with the duty of collecting and re-distributing or accounting for the revenues in kind, of a large or small district or village under the orders of its governor or head-man; also with all the works of making up or repair of moveable Government property, such as clothing, furniture, &c., P.

سرکردہ *sar-kardah* (subs.) a high official entrusted with any particular function, P.

سرگی *sürgi* (subs.) a purging draught.

سرماک *sür-mak* (v. intr.) to be purged (in consequence of a draught).

سفیل *safîl* (subs.) a fortification, a battlement.

سقال *saqâl* (subs.) a beard.

سقتورماق *süq-tür-mâq* (v. caus.) to cause to squeeze.

سقسماق *süq-ish-mâq* (v. recip.) to squeeze in company, to squeeze one another (by the throat).

سقماق *süq-mâq* [prond. almost *siq-mâq*] (v. tr.) to squeeze to express (juice, &c.).

سکراتماک *sakra-'t-mak* (v. caus.) to cause to jump close-footed.

سکراشماک *sakra-'sh-mak* (v. recip.) to jump together.

سکراماک *sakra-mak* (v. intr.) to jump close-footed, to hop.

سکز *sakiz* (num.) eight.

سکزایلان *sakiz-âilan* (num. subs.) a group of eight.

سکزچی *sakiz-inchi* (num. adj.) eighth.

سکسن *saksan* (num.) eighty [*sakiz* "eight" and *un* "ten"].

سَلَله *salla* (subs.) a turban.

سَن *san* (pron.) thou.

- سُن *sün* [prond. almost *sin*] trial, experience.
- سُناتماق *sün-a-'t-maq* (v. caus.) to cause to try.
- سُناتماق *sün-a-'sh-maq* (v. recip.) to try one another, or in com-
- سُناغلیق *sün-a'gh-liq* (vl. adj.) tried, proved. [pany.
- سُناتماق *sün-a-maq* (v. tr.) to try, to prove, to make experiment.
- سُنچی *sün-ohi* (subs.) a trier, an examiner.
- سُنْدُررَتماق *sün-dür-'t-maq* (v. caus. redupl.) to cause to break (tr.), to cause to make broken.
- سُنْدُررَتماق *sün-dür-maq* (v. caus.) to cause to become broken, to break (tr.). [Also *sün-dür-üşh-maq*, &c.]
- سُنلاماق *sün-la-maq* (v. tr.) to try, to prove [same as *sün-a-maq*].
- سُنماق *sün-maq* (v. intr.) to break, to become broken; [also *sün-üşh-maq*, &c.].
- سُنیق *sün-iq* (vl. adj.) broken, in a broken state.
- سُو *sü* (subs.) water, a stream [the latter sense in composition chiefly, as *ak-su* "white stream or water," *kizil-su* "red stream or water"].
- سُواتماق *su-a-'t-maq* (v. caus.) to cause to anoint.
- سُواشماق *su-a-'sh-maq* (v. recip.) to anoint together, to anoint one
- سُوالماق *sü-a-l-maq* (v. pass.) to be anointed. [another.
- سُوالماق *sü-al-maq* (v. intr.) to run dry (said of a cow in milk).
- سُواماق *sü-a-maq* (v. tr.) to spread any liquid or semi-liquid over a surface, to anoint, to smear, to plaster.
- سُوانماق *sü-a-'n-maq* (v. refl.) to anoint one's self.
- سُوپاماق *sü-ba-maq*. The same as *sülamaq* [also *subatmaq*, *subash-*
- سُوت *süt* (subs.) milk. [*maq*, &c.].
- سُوحُوک *süchük* (adj.) sweet (not bitter or sour).
- سُورچی *sü-chi* (subs.) a water-carrier. [P. T.
- سُوداگرچیلیق *saudagar-chi-liq* (subs.) the profession of a merchant,

- سودراتماک *sudra-t-mak* (v. caus.) to cause to drag.
 سودراشماک *sudra-'sh-mak* (v. recip.) to drag one another, or together.
 سودرالماک *sudra-'l-mak* (v. pass.) to be dragged.
 سودراماک *sudra-mak* (v. tr.) to drag.
 سودرانماک *sudra-'n-mak* (v. refl.) to drag one's self, to be dragging (as a rope behind a cart).
 سوراتماق *sūra-'t-maq* (v. caus.) to cause to ask.
 سوراشماق *sūra-'sh-maq* (v. recip.) to ask one another, or in company.
 سوراق *sūra'q* (vl. subs.) inquiry into the rights of a matter,
 سورام *sūra-'m* (subs.) harrow. [justice].
 سوراماق *sūra-maq* (v. tr.) to ask, to inquire; also, to rule, to have jurisdiction.
 سوراماک *sūra-mak* (v. tr.) to drag.
 سورتورماک *sürt-tür-mak* (v. caus.) to cause to wipe.
 سورتماک *sürt-mak* (v. tr.) to wipe, КН; to smear, Y.
 سورتوشماک *sürt-üş-mak* (v. recip.) to wipe in company.
 سورگو *surgu* (subs.) a purging draught.
 سورماق *sür-maq* (v. tr.) to ask. The same as *sura-maq*.
 سورماک *sür-mak* (v. tr.) to drive together (sheep, &c.).
 سوروشماک *sür-üş-mak* (v. recip.) to drive together in company, to drive one another alternately backwards and forwards (as cattle fighting).
 سوررؤک *sürük* (subs.) a flock, a herd [from *sürmak*].
 سوررؤن *sürün* (subs.) a Royal assembly, a King's Court.
 سورونچاک *sür-ün-chak* (adj.) stumbling, given to stumbling.
 سوررؤنماک *sür-ün-mak* (v. refl.) to stumble [qu. to drive one's self together].
 سوز *söz* (subs.) a word, a speech; also, any written matter.
 سوزاک *sözaq* (subs.) venereal disease.
 سوزدرماک *süz-dür-mak* (v. caus.) to cause to strain (through a cloth, &c.).
 سوزگو *süz-gü* (subs.) a strainer, a cullender.
 سوزگوچ *süzgüch* (subs.) a small-toothed comb (with a rib in the middle).

- سوزلاڻماك *söz-la-'t-mak* (v. caus.) to cause to speak.
 سوزلاشماك *söz-la-'sh-mak* (v. recip.) to speak together.
 سوزلاماك *söz-la-mak* (v. tr.) to speak, to say, to talk.
 سوزلاڻماك *söz-la-'n-mak* (v. refl.) to talk to one's self.
 سوزماك *süz-mak* (v. tr.) to strain, to filter; to remove solids from
 a saucepan.
 سوزولماك *süz-ül-mak* (v. pass.) to be strained, or filtered.
 سوغارتماق *sü-ghar-'t-maq* (v. caus.) to cause to water.
 سوغارشماق *sü-ghar-'sh-maq* (v. recip.) to water in company.
 سوغارماق *sü-ghar-maq* (v. tr.) to water (the ground or a horse).
 سوغو *sü-ghu* (subs.) a water-pail.
 سوغوچاق *sü-ghu-chaq* (subs.) a small pail; also the name of a tank
 in the city of Yarkand.
 سوغورتماق *sughur-'t-mâq* (v. caus.) to cause to draw out.
 سوغورماق *sughur-mâq* (v. tr.) to draw out (any long object as a sword
 from the scabbard, or a stick from a faggot).
 سوغوروشماق *sughur-ush-mâq* (v. recip.) to draw out in company, to draw
 (swords) on both sides.
 سوغوق *sughoq* (adj.) cold.
 سوف *süf* (subs.) fine linen or cotton cloth.
 سؤفا *süfa* (subs.) a raised platform for sitting on; origin of our
 'sofa,' P.
 سؤفې *süfi* (subs.) a recluse, a religious man, A.
 سؤق *süq* (subs.) the stroke of the evil eye.
 سؤقتا *soqta* (subs.) black puddings (the blood of animals filled
 into sausages; used in feeding dogs), KAZ.
 سؤقتورتماق *soq-tur-maq* (v. caus.) to cause to strike.
 سؤقتماق *soq-maq* (v. tr.) to strike.
 سؤقماق *süq-maq* (v. tr.) to sheathe, to pass any long object into a
 receptacle.
 سؤكۈر *soküür* (adj.) blind, KAZ.
 سؤقوش *soqush* (v. subs.) a fight, a striking [from *soqmaq*].
 سؤقوشماق *soq-ush-maq* (v. recip.) to strike one another, to fight.

- سوقولماق *soq-ul-maq* (v. pass.) to be beaten.
 سوقوم *soqum* (subs.) a fat ox.
 سوك *suk* (subs.) millet cleaned of its husk.
 سوكا *suka* (subs.) an ear-ring.
 سوكسوك *suksuk* (subs.) a tree used for fuel. The same as *saksaul*.
 سوكماك *suk-mak* (v. tr.) to scold, or vituperate.
 سوكماك *suk-mak* (v. tr.) to undo a seam.
 سوكوش *sukush* (subs.) abuse, vituperation.
 سوكوشماك *suk-ush-mak* (v. recip.) to scold or abuse one another.
 سوكوشماك *suk-ush-mak* (v. recip.) to undo a seam together.
 سوكولماق *suk-ul-mak* (v. pass.) to be scolded.
 سوكولماق *suk-ul-mak* (v. pass.) to be undone (of a seam).
 سوكات *sugat* (subs.) a willow tree. Also the name of a place (where these trees grow) and of a Pass, in the Kuen-Lun (near Shahid-ullah).
 سوكال *sugal* (subs.) a wart.
 سول *sol* (adj.) left [hand].
 سولاغاي *sol-aghai* (adj.) left-handed.
 سولاق *su-laq* (subs.) a watering-place for cattle.
 سولاق *sula'q* (subs.) a house in which cattle or sheep are kept.
 سولاقاي *sulaqai* (adj.). The same as *solaghai*.
 سولاقماق *sula-'q-maq* (v. intr.) to be enclosed, or shut up (in any place).
 سولاقماق *sula-maq* (v. tr.) to enclose, to shut up.
 سولاقماق *su-la-maq* (v. tr.) to water (either cattle or the ground).
 سولو *sulu* (subs.) breath, KAZ.
 سولوق *suluq* (subs.) a bit (horse's).
 سولوق *su-luq* (subs.) a waterproof, or garment to ward off the rain.
 سولوقشماق *sulu'q-ush-maq* (v. recip.) to be enclosed together or at the same time.
 سولوقشماق *sulu'q-maq* (v. intr.) to be enclosed.
 سوليقي *suliq*. For *suluq* (both senses).

- سوم *sum* (adj.) thick, massive.
 سومورماك *sum-ur-t-mak* (v. caus.) to cause to become fat, to fatten (tr.).
 سومورماك *sum-ur-mak* (v. intr.) to become fat.
 سوموروشماك *sum-ur-ush-mak* (v. recip.) to become fat together.
 سونگ *sung* (post-pos.) after, behind [governs the affix *din*]. Also absolutely as an adverb, KAZ., KH.
 سونگач *sungach* (subs.) the *os coccygis*.
 سونگاق *sungaq* (subs.) a bone.
 سونگالچاق *sungalchaq* (subs.) the heel-bone.
 سونگپياز *sung-piaz* (subs.) a leek, CH. P.
 سونگرا *sung-ra* (post-pos. and adv.). The same as *sung*, KAZ., KH.
 سونگهي *sung-ghi* (adj.) hinder, aftermost, following.
 سونگوچ *sunguch* (subs.) a culvert, a hole for the escape of water, Y.
 سونگور *sungur* (subs.) a tendon. [to digest.
 سونگورتماك *sung-ur-t-mak* (v. caus. redup.) to cause to absorb, to cause
 سونگورماك *sung-ur-mak* (v. caus.) to absorb, to digest, [literally, to cause to be absorbed or digested]. See *singurmak*.
 سونگوروشماك *sung-ur-ush-mak* (v. caus. recip.) to absorb or digest together.
 سونماق *sun-maq* (v. tr.) to stretch, to extend (a limb), *sun-up yet-mak* to reach (by stretching out a limb).
 سونوشماق *sun-ush-maq* (v. recip.) to stretch (limbs) towards one another, or together.
 سونوماق *suwu-t-maq* (v. caus.) to cause to be or become cold, to cool (tr.).
 سونوشماق *suwu-sh-maq* (v. recip.) to become cold together, to cool (intr.) together.
 سونوق *suwu'q* (vl. adj.) cold, cool.
 سوروماق *suwu-maq* (v. intr.) to become cold, to cool.
 سويتاماك *siya-t-mak* (v. caus.) to cause to support or prop up.
 سوياغ } (subs.) oil [literally 'water-fat'].
 سوياق }

سرباك *süyak* (subs.) a bone, Каз.

سربال *süyal* (subs.) a wart, Каз.

süya-'l-mak (v. pass.) to be supported or propped (as a sick man).

سويام *süyam* (subs.) a measure (the span between the forefinger and thumb).

سوياماك *süya-mak* (v. tr.) to support or prop up (as a sick man); also, to prop up, or cause to lean, any object against some firmer thing; also metaphorically, to support the credit of any one.

سوياملاماك *süyam-la-mak* (v. tr.) to span or measure with the thumb and forefinger. [against.

سويانماك *süya-'n-mak* (v. refl.) to support one's self by, to lean

سويانشماك *süya-'n-ish-mak* (v. refl. recip.) to lean against one another.

سويكماك *süika-mak* (v. tr.) to smear, to daub.

سويكانشماك *süika-'n-ish-mak* (v. refl. recip.) to rub or brush against one another (as men in a crowded street).

سويكانماك *süika-'n-mak* (v. refl.) to smear one's self; also, to rub one's self (as an animal against a post).

سويماق *süi-maq* (v. tr.) to kill by cutting the throat; also to skin.

سويماك *süi-mak* (v. tr.) to love, to like; to kiss, to caress.

سويوكلوك *süy-ük-lük* (vl. adj.) beloved.

سويونچي *süy-ün-chi* (subs.) a reward for pleasure given, a (substantial) mark of gratitude.

سويونماك *süy-ün-mak* (v. refl.) to be pleased or happy (literally, to like one's self, 'to fancy one's self').

سويونوچ *süy-ün-üch* (subs.) pleasure, happiness.

سيپاتماق *sipa-'t-maq* (v. caus.) to cause to stroke.

سيپاشماق *sipa-'sh-maq* (v. recip.) to stroke one another.

سيپاماق *sipa-maq* (v. tr.) to stroke.

سيپالاماق *sipa-la-maq* (v. tr.) to stroke continuously; also specially, to feel about for any thing, to search with the fingers or hand, "tätonner."

سيپانماق *sipa-'n-maq* (v. refl.) to stroke one's self, to plume itself
(of a bird), to arrange one's hair, &c.

سيپچ *sipach* (subs.) a turban of white cloth.

سيپماك *sip-mak* (v. tr.) to strew, to sprinkle, to scatter [by dropping, not by casting].

سيتار *sitar* (subs.) a guitar [*seh* "three", *idr* "string"], P.

سيتارچي *sitar-chi* (subs.) a player on the guitar, P. T.

سينچ *sikh* (subs.) a spit, a skewer, P.

سيرر *sirr* (subs.) the colour vermilion; cinnabar, also colour in general.

سير *Sirr* (prop. name) the River Jaxartes or Saïhun.

سيرپيلماك *serpi-'l-mak* (v. pass.) to be moved forward in a wave.

سيرپيماك *serpi-mak* (v. tr.) to move (a fluid or semi-fluid) forward in a wave.

سيرپينماك *serpi-'n-mak* (v. refl.) to move (itself) forward in a wave, to surge.

سيرقوراماق *serqura-'t-maq* (v. caus.) to cause sharp pain in any particular spot of the body.

سيرقوراماق *serqura-maq* (v. intr.) to feel sharp local pain.

سيرلاتماق *sirr-la-'t-maq* (v. caus.) to cause to paint.

سيرلاشماق *sirr-la-'sh-maq* (v. recip.) to paint together.

سيرلاماق *sirr-la-maq* (v. tr.) to paint, to lay on colour.

سيرليق *sirr-liq* (adj.) painted, coloured.

سيرماق *siyir-maq* (v. tr.) to tell one's beads (of a rosary).

سيريتماق *siri-'t-maq* (v. caus.) to cause to quilt.

سيريلماق *siri-'l-maq* (v. pass.) to be quilted.

سيريماتاق *siri-maq* (v. tr.) to quilt, to ornament a garment, &c. by rows of stitches.

سيز *siz* (pron.) you, [used respectfully to a single person as in English].

سيز *siz* (post-pos.) without, deprived of; also, as a privative affix to adjectives, &c., [*e. g.*, *khush-siz* "un-happy" or "dis-pleased"].

سيزدورماک *sez-dur-mak* (v. caus.) to cause (involuntarily), to discover or become aware, to let out (a secret).

هيزغورماق *sizghur-maq* (v. intr.) to whistle.

هيزلاق *sizlaq* (adj.) unwell, ailing; *aghriq-sizlaq* (subs.) an epidemic.

هيزلاتماق *siz-la-'t-maq* (v. caus.) to cause local pain.

هيزلاشماق *siz-la-'sh-maq* (v. recip.) to feel pain together.

سيزلاماق *siz-la-maq* (v. intr.) to feel any local pain.

هيززماق *siz-maq* (v. tr.) to make a mark by scratching.

هيززماک *sez-mak* (v. tr.) to detect, to become aware.

سيززيق *siz-iz* (vl. subs.) a scratch, a line or mark scratched.

هيززيک *sez-ik* (vl. subs.) a clue, a solution.

هيززىلماک *sez-il-mak* (v. pass.) to be detected.

هيفونگ *saifung* (subs.) a tailor, CH.

هيل *sil* (subs.) a flood, a flooding, A.

سيلاتماق *sila-'t-maq* (v. caus.) to cause to rub down, to cause to use friction.

هيلاتماق *sila-'t-maq* (v. caus.) to cause to entertain (a guest), KAZ.

هيلاشماق *sila-'sh-maq* (v. recip.) to rub down together.

هيلاشماق *sila-'sh-maq* (v. recip.) to entertain one another, KAZ.

هيلاماق *sila-maq* (v. tr.) to rub down, to use friction.

هيلاماق *sila-maq* (v. tr.) to entertain (a guest) to show hospitality.

سيم *sim* (subs.) wire, P.

سيماب *sim-ab* (subs.) quicksilver [literally "silver-water"], A. P.

سيمارماق *simar-maq* (v. tr.) to tuck up one's sleeves or trousers.

سيمالاماق *sima-la-maq* (v. tr.). The same as *simarmaq*.

سيمرئماک *semir-'t-mak* (v. caus.) to become fat, to fatten (tr.).

سيمرئشماک *semir-'sh-mak* (v. recip.) to become fat together.

سيمرماک *semir-mak* (v. intr.) to become fat, to fatten.

سمز *semiz* (adj.) fat.

سين *sin* (subs.) a trial, an experiment.

سيناتماق *sina-'t-maq* (v. caus.) to cause to try.

سيناشماق *sina-'sh-maq* (v. recip.) to try together.

سیناق *sina-'q* (vl. adj.) tried, proved.

سیناماق *sina-maq* (v. tr.) to try, to make trial, to test, to prove.

سیندورماق *sin-dur-maq* (v. caus.) to cause to break (intr.), to break (tr.).

سینچی *sin-chi* (subs.) a trier, an assayer, an experimenter; specially, a judge of horse-flesh.

سیندورماک *sin-dur-mak* (v. caus.) to cause to be absorbed, to absorb

سینگیрмаک *singgir-mak* (v. tr.) to blow one's nose. (tr.).

سینگل *singil* (subs.) a sister younger than one's self.

سینگماک *sing-mak* (v. intr.) to be absorbed, to dry up.

سینگورماک *sing-ur-mak* (v. caus.) to cause to dry up, to absorb.

سینماق *sin-maq* (v. intr.) to break, to become broken.

ش

شات *sháp* (subs.) a straight sword.

شاپالاق *shopalaq* (subs.) the palm of the hand together with the inner side of the fingers; also, a slap (with the open hand).

شاتال *shatal* (subs.) a percentage of the winnings at any game, taken by the landlord or by the Government.

شاتیر *shátir* (subs.) a man who goes in advance to clear the way by calling out to the people.

شاتیرلاماق *shátir-la-'t-maq* (v. caus.) to cause to make a noise so as to scare away birds, &c.

شاتیرلاشماق *shátir-la-'sh-maq* (v. recip.) to make a noise, &c. in company.

شاتیرلاغوج *shátir-la-ghuch* (subs.) a rattle for scaring away birds, &c.

شاتیرلاماق *shátir-la-maq* (v. tr.) to make a noise so as to scare away birds, &c., to spring a rattle, P. T.

شاتو *shátu* } (subs.) a ladder.
شاتی *sháti* }

شاتیر *shátir*. The same as شاتیر

شاخ *shákh* (subs.) a branch, a twig; also a horn, antler, P.

- شاخار *shākhār* (subs.) potash, P.
 شاخلاماق *shākh-la-maq* (v. intr.) to branch out.
 شادليق *shād-liq* (subs.) happiness, pleasure, P. T.
 شارق شارات *shārdq-shārdq* (subs.) the rattle or noise of a child's plaything, of a waggon, &c.
 شاراتلاق *sharaq-la-'t-maq* (v. caus.) to cause to rattle, to rattle (tr.).
 شاراتلاماق *sharaq-la-maq* (v. intr.) to rattle, to make a rattling noise.
 شارقوراماق *shār-qura-maq* (v. intr.) to make a splashing noise, as a torrent or a waterfall.
 شاشتورماق *shāsh-tur-maq* (v. caus.) to cause to hurry.
 شاشماق *shāsh-maq* (v. intr.) to hurry, to make haste.
 شاشورماق *shāsh-ur-maq*. The same as *shashturmaq*.
 شاغل *shaghal* (subs.) a jackal.
 شاف *shāf* (subs.) a straight sword.
 شانلاتماق *shāf-la-'t-mdq* (v. caus.) to cause to strike with the sword.
 شانلاشماق *shāf-la-'sh-mdq* (v. recip.) to strike one another or together with the sword.
 شانلاماق *shāf-la-mdq* (v. tr.) to strike with the sword.
 شاکال *shakal* (subs.) broken walnut or other fruit-shells.
 شال *shāl* (subs.) a wooden plank. Also P. stuff made of goat's down, shawl.
 شالياغليق *shāl-yaghliq* (subs.) a woollen (shawl-stuff) handkerchief or small scarf.
 شالاتلاماق *shalaq-la-'t-mdq* (v. caus.) to cause to jog, to cause to be shaken uncomfortably.
 شالاتلاماق *shalāq-la-mdq* (v. intr.) to jog, to be shaken uncomfortably.
 شاللاقي *shallaqi* (adj. and subs.) impudent, shameless (of a woman); also, a shameless woman.
 شالتاق *shaltaq* (adj.) defiled.
 شالي *shāli* (subs.) rice in the husk, P.
 شام *sham* (subs.) a candle [made in Eastern Turkistān of tallow with a wick of cotton wound round a central piece of reed], A.

- شاما *shâma* (subs.) refuse tea leaves after infusion.
 شامال *shamâl* (subs.) wind, (? A.).
 شامه *shamah* (subs.) a candle.
 شانگ *shang* (subs.) a present, [? CH.].
 شانگغهي *shangghi* } (adj. and subs.) truculent, turbulent (of men),
 شانگغھو *shangghu* } vicious (of animals).
 شادقۇم *shâuqum* (subs.) tumult, noise.
 شارلانماق *shâu-la-'t-maq* (v. caus.) to cause to murmur (as water).
 شارلاماق *shâu-la-maq* (v. intr.) to murmur (as distant waters), to hum (as a kettle).
 شاوني *shâuni* (subs.) a thread of hemp, flax or hair.
 شاي *shai* (adj.) dandy, well-dressed.
 شاي *shâi* (subs.) a kind of silk stuff with large brilliant pattern, made in Central Asia [properly *shahi*, P.].
 شايلاتماق *shâi-la-'t-mak* (v. caus.) to cause to prepare.
 شايلاماق *shâi-la-mak* (v. tr.) to prepare, to make ready.
 شايلانماق *shâi-la-'n-mak* (v. refl.) to prepare one's self.
 شُبْ شُبْ *shüb-shüb* (subs.) the shuffling noise of slippers.
 شېرلاشماق *shibar-la-'sh-maq* (v. recip.) to whisper together.
 شېرلاماق *shibar-la-maq* (v. tr.) to whisper.
 شېو *shu-bû* (pron.) this very, this same.
 شېپىلانماق *shipil-la-'t-maq* (v. caus.) to cause to whistle (a whip).
 شېپىلاماق *shipil-la-maq* (v. intr.) to whistle through the air (as a whip or stick quickly moved), to whizz.
 شىخ *shakh* (subs.) a precipitous cliff. Also (adj.), hard, difficult, P.
 شىخار *shakhâr* (subs.) potash, P.
 شىده *shadah* (subs.) a string of beads, &c.
 شرم ليک *sharm-lik* (adj.) shameful, also shame-faced, P. T.
 شىشاک *shishak* (adj. and subs.) in the second year [sheep or goats].
 شىشتوراك *shish-tur-mak* (v. caus.) to cause to swell.
 شىشماک *shish-mak* (v. intr.) to swell.

- ششی *shashi* (subs.) a flimsy material used for linings.
- شغادل *Shaghāwal* (subs.) a high official of Central Asian sovereigns, who is supreme over all the Kazis and Mullahs.
- شفاتاپماق *shifā-tap-maq* (comp. v. intr.) to recover (from illness), [literally "to find a cure"], A. T.
- شفاکورماک *shifa-kurmak* (comp. v. intr.) to recover by the use of a remedy (from illness), to obtain benefit (from a remedy), [literally "to see or experience a cure"], A. T.
- شگاک *shak-kāk* (adj.) suspicious, jealous; also (subs.) a suspicious person, P. T.
- شکل *shakl* (subs.) appearance, form, A.
- شکل *shakal* (subs.) a walnut shell.
- شمال *shamāl* (subs.) wind (from any quarter), [? A.].
- شمة *shamah* (subs.) candle [for شمع, A.].
- شو *shu* (pron.) that [said of things that are present, though not immediately under one's hand].
- شوبو *shu-bu* (pron.) this or that very, the same.
- شوتی *shuti* (subs.) a ladder.
- شوخ *shokh* (adj.) playful, P.
- شوخلا *shokhla* (subs.) a small yellow seed contained in a pod or fruit, [used in Turkistān as medicine, and in Tibet by the women to stick on to their faces]. The seed of *Solanum nigrum* according to Aitchison.
- شوخلاماق *shokh-la-māq* (v. tr.) to render playful, to make idle, to cause to play truant.
- شوخلانماق *shokh-la-'n-māq* (v. refl.) to be playful, to play [literally, to render one's self playful], to play truant.
- شوخلانوشماق *shokh-la-'n-ūsh-māq* (v. refl. recip.) to play together or with one another.
- شوخلوق *shokh-luq* (subs.) playfulness, idleness, distraction.
- شودورونگ *shudurung* (subs.) dew.
- شودوگار *shudugār* (subs.) land ploughed previous to sowing, which is only done by very careful cultivators, (? P.).

شور *shor* (subs.) white efflorescence on the ground, common in certain districts and making the land barren, P.

شورا *shora* (subs.) saltpetre, P. Also, a small plant.

شورلاق *shor-laq* } (subs. and adj.) covered with white efflorescence,
شورلیق *shor-liq* } salsugineous; also, land so affected, P. T.

شوشانگ *shoshang* (subs.) shears, (? CH.).

شوق *shoq*. For *shokh*, P.

شوق *shoq* (subs.) an inclination or hobby, A.

شوک *shuk* (interj.) Silence! Be quiet!

شول *shul* (pron.) that [applied to less distant objects than *ul*, but not implying such nearness as *bul*].

شولا *shulla* (subs.) a dish composed of rice, meat and fat, cooked till it is soft.

شوم *shum* (adj.) unlucky, unfortunate, ne'er do weel, A.

شومچه *shum-chah* [for *shun-chah*] (adj. pron., also adv.) that much, to that amount or extent, [from *shul* 'that' and *chah*, for *chín* 'amount' or 'extent'].

شوملوق *shum-luq* (subs.) bad luck, coming to grief, [through fault or mismanagement], A. T.

شوندا *shun-dā* (adv.) there, in that (place), at that (place), [from *shul* 'that' and *dā* 'in' or 'at'].

شونداغ *shun-dagh* } (adjl. pron., also adv.) that like, such; also, like
شونداق *shun-daq* } that, so. [From *shul* 'that' and *daq* or *dagh* 'like'.]

شونغاجه *shun-gha-chah* (comp. adv.) that far, as far as to that, [from *shul* 'that', *gha* 'to' and *chah* for *chín* 'extent'].

شونقار *shunqār* (subs.) a kind of hawk, (?) '*Falco Hendersoni*.'

شونگچه *shun-ga-chah*. The same as *shunghachah*.

شونونگاجه *shu-nung-gha-chah*. The same, Y.

شونقار *shunqār*. The same as *shunqār*.

شیخ *shaiikh* (subs.) the chief person in charge of a mosque.

Shaiikh-ul-Islam, a sort of religious police-officer, looking after religious observances as well as bazār morals.

شیره *shirah* (subs.) grape-juice (sherbet); also rice-water, P.

شیریش *shirish* (subs.) a powder made from a certain root, and used mixed with water for glue.

سیکل *shikl*. For *shakl*.

شیلان *shilan* (subs.) cooked rations issued to soldiers, P.

شیلانچی *shilan-chi* (subs.) the officer charged with issuing these rations, P. T.

شیلتاگ *shiltaq* (subs.) a frivolous complaint of assault, made for the purpose of extracting money. [plaints.

شیلتاچی *shiltaq-chi* (subs.) a person given to making such com-

شیلیم *shilim* (subs.) paste made of flour or rice.

شیم *shim* (subs.) wide outer trousers, often large enough to take in the skirts of several robes.

شیمالاماق *shim-äl-a-mäq* (v. tr.) to tuck up quickly (sleeves or trousers,) [? from *shim* and *älmdq* 'to take'] (governs the accusative both of the limb and also of the garment). [trousers.

شیمالانماق *shim-äl-a'n-mäq* (v. refl.) to tuck up one's sleeves or

ف

ضعیفه *za'ifah* (subs.) a woman. [A.]

فلل *zalal* (subs.) injury, [for *zarar*, A.].

ط

طاباق *ṭābāq* (subs.) a dish, (of earthenware, wood or metal), A.

طاماق *ṭamāq* (subs.) the throat; also Кн., any eatable.

طاناب *ṭandāb* (subs.) a measure used in measuring land, viz., a square whose side is forty *gaz* in length, each *gaz* being about 8 feet 6 inches. Also, the tax levied on gardens and pleasure-grounds, which is assessed per *ṭandāb*, A.

طای *ṭāi* (subs.) a young horse rising two years old.

طایاغ *ṭayagh* } (subs.) a walking-stick, or pole.
طایاق *ṭayaq* }

طلا *ṭillah* (subs.) gold; also, a gold coin worth 10 shillings, P.

طوی *ṭoi* (subs.) a feast given on the occasion of a wedding or circumcision.

طويڭاڭ } (subs.) an animal's hoof.
 طويڭاڭ }
 طويڭاڭ }
 طويڭاڭ }

طويڭاڭماق *toi-dur-maq* (v. caus.) to cause to be satiated, to satiate.

طويماق *toi-maq* (v. intr.) to become satiated, to feast.

طويڭماق *toy-in-maq* (v. refl.) to satiate one's appetite, to gorge

طيار *tayyar* (adj.) ready, fit; also, fat, A. [one's self]

غ

غاجاماق *ghâja-maq* (v. tr.) to gnaw.

غار *ghâr* (subs.) a cave, a cavern, A.

غارقوراماق *ghâr-qura-t-maq* (v. caus.) to cause to give a hollow sound.

غارقوراماق *ghâr-qura-maq* (v. intr.) to give a hollow sound.

غانجورغە *ghanjurghah* (subs.) a strap for fastening loads, &c., to the back of the saddle.

غارغە *ghâoghah* (subs.) a row, a disturbance, P.

غەر *gharr* (subs.) a woman of bad repute.

غەر *ghürr* (interj.) a term of mockery, used to a person who fails to accomplish what he has tried to do.

غورونگلاشماق *ghurung-la-'sh-maq* (v. recip.) to speak together in such a way that the by-standers do not understand.

غورونگلاماق *ghurung-la-maq* (v. intr.) to tinkle (as a camel's bell); also, to talk gibberish, to give an uncertain answer.

غلبەر *ghalbir* (subs.) a coarse sieve.

غلنگ *ghaltak* (subs.) a wooden disk (used as a wheel for play carts in Turkistân, and for working ones in many parts of India); also, a roller, a pulley, a reel, [? P. from *ghaltidan*].

غلچە *Ghalchah* (subs.) the name applied to the Aryan (Iranian) inhabitants of the mountain-districts chiefly Shīyar (Kōlab, Mācha, Karategin, Badakhshān, Wakhān, &c.); also, in Eastern Turkistân applied generally to a slave bought with money.

غنگنولاماق *ghangghul-la-maq* (v. intr.) to hum (as a swarm of bees); to talk indistinctly (as a child), to babble.

غڤ *ghu*. An affix corresponding with our "n't" in "isn't there?" "doesn't it?" *E. g.* *bār-ghu* "(there is) isn't there?"

غوجا *ghojah*. For *khojah*.

غوز *ghoza* (subs.) a cotton-pod. For غوز *P.*

غولجا *gholjah* (adj.) mad (of a dog).

غه *ghah* (post-pos.) to, on to, into, &c. (Also written *ga*, *qs* and *ka*), [used to imply action as distinguished from rest; *e. g.*, *kitab ga pit-tim* "I wrote in(to) the book;" but *kitab da tāptim* "I found in the book"].

غي *ghi*. See *ki* and *gi*.

غيچاق *ghijàq* (subs.) a violin.

ف

فات *fāt* (adv.) quickly. The same as *pdt.*

فاني *fāfi* (subs.) a dwarf with a full-sized trunk and head. The same as *pāpi*.

فوت *fut* (subs.) a leg (including the foot). The same as *pwt*.

فوجاك *fuchak* (adj.) empty, rotten at the core, of fair appearance but valueless. Also *puchak*.

فيلخورماق *fikhür-mâq* } (v. intr.) to snort (of a horse).
فیشقرماق *fishqir-mâk* }

ق

قاب *qâb* (subs.) a coarse woollen sack.

قابات *qabat* (subs.) fold, covering, lap, stratum. *E. g.* بكي قابات *iki kabat kâghaz dah yurga'ng* "wrap (it) in two folds of paper."

قاباتلاماق *qabat-la-maq* (v. tr.) to lay in layers, or one on the top of the other.

- قباق *qabaq* } (subs.) a gourd used for carrying water.
 قاپاق *qapaq* }
 قابىرغە *qabirghah* (subs.) a rib.
 قاپارچوق *qapar-chuq* (subs.) a rash on the skin.
 قاپارماق *qapar-maq* (v. intr.) to rise in a blister (as from a burn on the skin, or a rub on the foot from an ill-fitting boot).
 قابالماق *qaba-'l-mâq* (v. pass.) to be shut in.
 قاباماق *qaba-mâq* (v. tr.) to shut in, to confine (used of men only).
 قاباماق *qaba-maq* (v. intr.) to bark (of dogs).
 قابان *qaban* (subs.) a male pig, a boar.
 قاپتال *qaptal* (subs.) the two side pieces of a Turki saddle, from which the arch of the seat springs on both sides; also, that part of the horse's back covered by them, KAZ.
 قاپتورماق *qap-tur-maq* (v. caus.) to cause (a dog) to bite, to set on (a dog). [From *qap-maq*.]
 قاچە *qap-chah* (subs.) a small sack (*qab*).
 قاچىچوق *qap-chuq* (subs.) a small *qab*, KAZ.
 قاپشاشماق *qapsa-'sh-maq* (v. recip.) to wrangle together, KAZ.
 قاپساماق *qapsa-maq* (v. intr.) to jangle, to wrangle, KAZ.
 قابقاق *qapqaq* (subs.) a lid, a cover.
 قابقان *qapqan* (subs.) a gin for catching foxes.
 قەقرا *qap-qara* (adj.) very black; [an intensitive form of *kara*].
 قاپقون *qapqun*. The same as *qapqan*.
 قاپلاتماق *qap-la-'t-maq* (v. caus.) to cause to plate.
 قاپلاماق *qap-la-maq* (v. tr.) to plate (one metal with another).
 قاپماق *qap-maq* (v. tr.) to bite [used of dogs].
 قات *qat* (subs.) a fold, a stratum. [The same as *qabat*.]
 قاتار *qatar* (subs.) a line, a row, P.
 قاتاغان *Qataghan* (prop. name) a tribe of Uzbek Tûrks inhabiting the districts of Kunduz, &c. [A Tajik proverb says:
 هر جا كه رسيد سِمِ اسبِ قاتاغان - نه مُرده كفن يابد و نه زنده وطن
 "Where the hoof of the *Kataghan's* horse arrives,
 "There the dead find no grave-cloth, and the living no home".]

- قاتقاق *qat-qaq* (adj.) stiffening, stiffened (as badly prepared leather) ; [from *qat-maq*].
- قاتلاتماق *qat-la-'t-maq* (v. caus.) to cause to fold.
- قاتلاماق *qat-la-maq* (v. tr.) to fold. [itself.]
- قاتلانماق *qat-la-'n-maq* (v. pass. and refl.) to be folded ; to fold
- قاتماق *qat-maq* (v. intr.) to become hard, to harden, to stiffen.
- قاتماق *qat-maq* (v. tr.) to twist (yarn into thread) ; also, to join, to put together.
- قاتناتماق *qatin-a-'t-maq* (v. caus.) to cause to travel (the same road) repeatedly.
- قاتناماق *qatin-a-maq* (v. tr.) to travel (the same road) repeatedly ; [to iterate, un-metaphorically].
- قاتورماق *qat-ur-maq* (v. caus.) to cause to become hard, to harden (tr.). [From *qat-maq* "to become hard".]
- قاتتورماق *qat-tur-maq* (v. caus.) to cause to twist (yarn) [From *qat-maq* "to twist".]
- قاتيغ *qâtigh* } (subs.) curds.
- قاتيغ *qâtig* }
- قاتيغ *qatt-igh* } (adj. and adv.) hard, stiff ; severe ; also, hardly, &c.
- قاتيغ *qatt-ig* } [From *qat-maq*.]
- قاتيم *qatim* (subs.) a time. *Bir qatim* once ; *iki qatim* twice, &c.
- قاتيم *qatim* (subs.) a needle-ful (of thread).
- قاچا *qacha* (subs.) a vessel (of any sort), a pot, &c.
- قاچان *qa-čan* (adv.) when ? [Derived probably from the common element *qai* "what," and some other word to denote measurement of time ? *chin* "amount".]
- قاچانغاچە *qachan-gha-chaḥ* (adv.) until when ? [With the dative affix *gha* and the affix *chaḥ* implying 'extent'.]
- قاچقاچ *qáčh-qáčh* (subs.) flight (before the enemy). [From *qach-maq*.]
- قاچقاق *qáčh-qáčq* (adj.) given to running away.
- قاچقۇنچى *qáčh-qu-'nchi* (subs.) a fugitive. [For *qach-qu-chi*.]
- قاچماق *qáčh-máčq* (v. intr.) to flee, to run away.

- قاچورماق *qāch-ur-māq* (v. caus.) to cause to flee, to put to flight.
 قاچورشماق *qāch-ush-māq* (v. recip.) to flee away together.
 قاچي *qāchi* (subs.) scissors, shears. [For *qainchi*.]
 قاچير *qāchir* (subs.) a mule. [For *khachar*, P.]
 قار *qār* (subs.) snow.
 قارا *qārā* (adj.) black. *Qara-tāgh* often used to designate mountains which are not covered with perpetual snow. (See Remarks, under *Aq-tāgh*.) *Qara-su* is similarly used to designate springs of water not derived from snow mountains. (The same remarks apply here.)
 قاراتماق *qārā-'t-māq* (v. caus.) to cause to look, to cause to regard.
 قاراغاي *qara-ghāi* (subs.) a fir-tree [generically].
 قاراچي *qārāqchi* (subs.) a highway robber, a bandit.
 قارالماق *qārā-la-māq* (v. tr.) to look frequently or carefully.
 قارالماق *qārā-la-māq* (v. tr.) to blacken (the face of any one, metaphorically), to look black upon, to regard with disfavour.
 قارالماق *qārā-'l-māq* (v. pass. and intr.) to be blackened; to become black.
 قاراليق *qara-liq* (adj.) in mourning (which in Yarkand consists in not shaving, putting on white and not-coloured clothes, &c.)
 قارالماق *qara-māq* (v. intr.) to look, to cast one's eyes [governs *gha*].
 قارامتول *qara-'mtul* (adj.) blackish. [wheat.
 قاراموق *qara-muq* (subs.) a small black seed of a weed found among
 قارانغو *qara-'nghu* (adj. and subs.) dark, obscure; also, the dark.
 قارانغولوق *qara-'nghu-luq* (subs.) darkness, obscurity.
 قاراول *qārā-wal* (subs.) a post of observation, a watch, [from *qaramaq*].
 قاراولچي *qārā-wal-chi* (subs.) a watchman, a vidette.
 قارتا *qarta* (subs.) the fat in a horse's stomach. Also, playing cards, Rus.
 قارتانگ *qar-'tang* (adj.) oldish, past the middle age.
 قارچيغه *qarchighah* (subs.) a species of a hawk, ? a gos hawk.

- قارچي *qarchi* (subs.) large scissors [for *qainchi*].
- قارساق *qarsaq* (subs.) a small kind of fox.
- قارشماق *qār'sh-maq* (v. intr.) to be disobedient, to be recusant [? for *qāra'sh-maq* "to exchange looks with any one"].
- قارشماق *qarsh-maq* (v. tr.) to mingle, to mix up.
- قارشې *qār'shi* (adv.) contrary, opposite. [? From *qara-maq*, *qarā'sh-maq*.]
- قارشىلاتماق *qār'shi-la-'t-maq* (v. caus.) to cause to make an angry rejoinder; to cause to place opposite.
- قارشىلاشماق *qār'shi-la-'sh-maq* (v. recip.) to make rejoinders to one another.
- قارشىلاماق *qār'shi-la-maq* (v. tr.) to place opposite.
- قارغامتاق *qargha-'t-maq* (v. caus.) to cause to curse.
- قارغاشماق *qargha-'sh-maq* (v. recip.) to curse together.
- قارغامتاق *qargha-maq* (v. tr.) to curse.
- قارغانماق *qargha-'n-maq* (v. refl.) to curse one's self, *viz.*, to imprecate curses on one's self in asseverating anything.
- قارغو *qarghu* (subs.) a blind man.
- قارغيش *qarghish* (vl. subs.) a curse.
- قارغه *qarghah* (subs.) a crow.
- قارقرا *qargqara* (subs.) a tuft or crest stuck in a woman's cap.
- قارلوغاچ *qarlughach* (subs.) a swallow.
- قارليق *qār-liq* (adj.) snowy. Also the name of a Pass in the Kuen-lun leading from Yolarik to Toghra-su on the Upper Karakash.
- قارماق *qarmaq* (subs.) a fish hook.
- قارمالاتماق *qarma-la-'t-maq* (v. caus.) to cause to grope.
- قارمالاماق *qarma-la-maq* (v. tr.) to grope (for anything in the dark).
- قارماماق *qarma-maq* (v. tr.) to seize, KIRGH.
- قارون *qārun* (subs.) belly, womb.
- قارونداش *qārun-dash* (subs.) a brother, a relation, [literally 'womb-fellow']. The particular relation is specified by the words: *bir-tuqqan qārundash* = one generation relation

or first (degree) of relationship, *viz.*, brother or sister ;
iki-tuqqan qârundash = related in second degree, &c.,
viz., children of brothers or sisters, &c. ; *ughul qârundash*
 "a male relative ;" *qiz qârundash* "a female relative."

قاري *qâri* (subs.) a person who can repeat the Koran by heart, A.

قاري *qari* (adj. and subs.) old, aged (used only of living creatures) ; also, an old man, an old woman.

قارش *qârish* (subs.) a span.

قارشلاتماق *qârish-la-'t-maq* (v. caus.) to cause to span.

قارشلاماق *qârish-la-maq* (v. tr.) to span out, to measure by spans.

قاريلماق *qâr-il-maq*. For *qairilmaq*.

قاريليқ *qari-liq* (subs.) old age.

قاريماق *qari-maq* (v. intr.) to become old.

قاز *qâz* (subs.) a goose [for *ghâz*, P.].

قازا *qâzâ* (subs.) fate, predestination [for قضا A.].

قازاق *Qàzâq* (prop. name) the name of several vast hordes of nomads known to the Russians as the Great, Middle and Little Hordes of *Kirghiz* (see that name). The *Qàzâqs* are divided (according to Turki reckoning) into three hordes : 1st, *Ulugh-yüz* (great horde) sub-divided into the tribes *Abdan* and *Dolat* ; 2nd, *Urta-yüz* (middle horde) sub-divided into the tribes, *Arghun*, *Naïman*, *Qipchaq*, *Kungrat* ; 3rd, *Kichik-yüz* (little horde) *Alchin*, *Jab-bas*. There are also innumerable further sub-divisions of each of these tribes.

قازان *qâzan* (subs.) a cauldron, a cooking-pot.

قازماق *qâz-maq* (v. tr.) to dig.

قازناق *qâznaq* (subs.) an inner room or store room, [? from *kha-zânah*, A.].

قازىق *qazuq* (subs.) a peg.

قازى *qazi* (subs.) a sausage of horse-flesh.

قازىق *qaziq*. The same as *qazuq*.

قازىلىق *qazi-liq*. For *qazi*, KAZ.

قازيمان *qāzi-māq*. The same as *qāzmdq*.

قاسقان *qasqan* (subs.) a thin broad wooden hoop forming the edge of a sieve, or of certain trays with perforated bottoms which are placed one above another over a cauldron of boiling water for the purpose of cooking pastry by steam.

قاسلاتماق *qas-la-'t-maq* (v. caus.) to cause to resolve.

قاسلاشماق *qas-la-'sh-maq* (v. recip.) to resolve together, to conspire.

قاسلاماق *qas-la-maq* (v. tr.) to resolve, to determine, to intend.
[From قصد A.]

قاسماق *qasmaq* (subs.) scrapings of a cooking-pot, *tāz-qasmaq* the scurf of a scald head.

قاش *qāsh* (subs.) the hair of the eye-brows; also, metaphor. a man's neighbourhood or presence; e. g., *aning qāsh-i-da* = near him, with him.

قاشانگ *qashang* (adj.) lazy, slow, sluggish.

قاشاو *qashao* (subs.) a curry-comb.

قاش تاش *qāsh-tash* (subs.) jade-stone. [This is found in the mountains of Khotan and Sanju, the so-called Kuen-lun. There are three varieties: 1st, *chaza-tash* obtained from the quarries, often full of flaws which destroy its value; 2nd, *pur-tash* (rotten stone) or *kawash* a soft variety of the same; 3rd, *su-tash* (water stone) the most esteemed; it is obtained in the form of pebbles, water-worn in the beds of the streams, whereby probably the flaws are eliminated, the resulting pebble being sound to the core, and therefore not likely to render useless the long labour of carving it, by the discovery of a hidden flaw in the centre. *Chapan-līk tash* (coated stone) a pure nucleus with a reddish outside is highly valued.]

قاشقا *qāshāq* (subs.) an animal's forehead.

قاشوق *qashuq* (subs.) a spoon for eating soup.

قاشيلاغوج *qāshi-la-ghuch* (subs.) a curry-comb.

قاشيلاماق *qāshi-la-maq* (v. tr.) to scratch all over (with the hands).

- قاشىماق *qashi-maq* (v. tr.) to scratch (on account of itching).
 قاشىنماق *qashi-'n-maq* (v. refl.) to scratch one's self.
 قاق *qaq* (adj.) dried, desiccated.
 قاق *qaq* (subs.) a temporary pool of water.
 قاقئورماق *qaq-tur-maq* (v. caus.) to cause to drive in (a nail, &c.).
 قاقىرماق *qâqir-maq* (v. tr.) to cough up phlegm.
 قاقىرىق *qâqriq* (subs.) phlegm from the mouth.
 قاقشاماق *qâqsha-mâq* (v. intr.) to lament in a plaintive or querulous manner.
 قاقلىق *qâq-liq* (subs.) dryness, desiccation.
 قاقماق *qâq-maq* (v. tr.) to drive in (a nail); also, to beat (a garment, &c., to remove the dust).
 قاقىلماق *qâq-il-mâq* (v. pass.) to be driven in.
 قاقىنماق *qâq-in-mâq* (v. refl.) (lit. to beat one's self) to dust one's self (by quick strokes of the hand).
 قالا *qald* (subs.) a fortress, a fort [for قلعه A.].
 قالاتماق *qâla-'t-mâq* (v. caus.) to cause to pile up.
 قالدق *qâldq* (subs.) a small wooden spoon for feeding small children.
 قالاتماق *qâla-mâq* (v. tr.) to pile up, to make up a fire.
 قالايى *qaldâyi* (subs.) tin [for قلعي A.].
 قالپاق *qâlpâq* (subs.) a felt wide-awake (hat), worn in hot weather by travellers, &c.
 قالتاق *qâltâq* (adj.) unworthy of credit, untrustworthy.
 قالتوراق *qâltura'q* (vl. adj. and subs.) palsied, trembling; a person afflicted with the palsy.
 قالتورانه *qâltura-'t-mâq* (v. caus.) to cause to tremble.
 قالتوراماق *qâltura-mâq* (v. intr.) to tremble, to quake, to shiver.
 قالدىراق *qâldîraq* (adj.) rustling (as paper or badly prepared leather, when crushed together).
 قالدىراتماق *qâldîra-'t-mâq* (v. caus.) to cause to rustle.
 قالدىراماق *qâldîra-maq* (v. intr.) to rustle, to give a rustling sound.
 قالدىرتماق *qâl-dîr-'t-mâq* (v. caus. redup.) to cause to put by.

قالديرماق *qāl-dir-maq* (v. caus.) to cause to remain, to put by, to leave. [From *qāl-maq*.]

قالديغاچ *qāldighach* (subs.) a swallow.

قالغيتماق *qalghi-'t-maq* (v. caus.) to cause to be drowsy, to make (any-one) sleepy (as by talking overmuch).

قالغيماق *qalghi-maq* (v. intr.) to become drowsy, to become sleepy, to nod.

قالماق *qāl-maq* (v. intr.) to remain, to stay behind. In composition with the Perf. Part. of another verb it expresses completion or condition: *e. g.*, *ketip qāldi* "he has started" (lit. "he remained gone"); *qetip-qāladur* "he is starting" (lit. "he is in the condition of starting").

قالماق *Qālmāq* (prop. name) a nomad people of Buddhist faith, living to the east of the Amír of Kashghar's dominions, the 'Calmucks' of European writers. The name appears to be applied to all the Mongolian tribes, by the Turks.

قالقيتماق *qalqi-'t-maq* (v. caus.) to cause to float.

قالقيماق *qalqi-maq* (v. intr.) to float. Also, to hover.

قالر *qalun* (subs.) a kind of open horizontal harpsichord, consisting of many strings of different lengths which can be tightened by turning their pegs or by means of moveable bridges. It is played partly with the fingers (like a harp) and partly with a little metal instrument like a tooth-pick. [For *qanun*, P.]

قالير *qālin* (subs.) a carpet, a rug of carpeting, P.

قالينك *qāling* (adj.) thick.

قاما *qama* (subs.) an otter, otter-skin.

قاماتماق *qama-'t-maq* (v. caus.) to cause to enclose or besiege.

قامالماق *qama-'l-maq* (v. pass.) 1, to be enclosed; 2, to have one's teeth set on edge.

قاماماق *qama-maq* (v. tr.) to enclose, to besiege.

قاماماق *qama-maq* (v. tr.) to set the teeth on edge (as anything acid).

- قامچی *qamchi* (subs.) a riding-whip (consisting of a short wooden handle with a thick stiff thong of plaited leather, lashed on so as to form one line with the handle).
- قاملاشتورماق *qam-la'sh-tur-mâq* (v. recip. caus.) to put together, to cause to live at peace together, &c., (*raccommoder* in both senses).
- قاملاشقاق *qam-la'sh-mâq* (v. recip.) to be fitted together (as broken pieces of anything); to be in unison, to be at peace together; to assist. [? From an unusual *qam-la-maq*.]
- قاملاشيشماق *qam-la'sh-ish-maq* (v. recip. redup.) to assist one another.
- قامیش *qamish* (subs.) a reed.
- قان *qân* (subs.) blood. Also, bloodshed.
- قانات *qandât* (subs.) a wing. Also, the side-covering of a Kirghiz *âkuï* or felt-tent.
- قانатаق *qân-a-'t-maq* (v. caus.) to cause to bleed.
- قاناماқ *qân-a-maq* (v. intr.) to bleed.
- قانтурмақ *qân-turmaq* (v. comp.) to shed blood, to massacre.
- قانлиچتي *kân-tichti* (verb used as an adj.) skin-flint, miserly. [Lit. 'he evacuates blood'.]
- قانجورغه *qanjurgah* (subs.) straps in the cantle of a saddle for fastening a cloak, &c.
- قانجورقه *qanjughah*. The same, КАЗ.
- قانجيغه *qanjighah*. The same, КН.
- قانچه *qan-chaḥ* (adv.) how much? how many?
- قاندا *qan-dâ* (adv.) where?
- قانداغ *qan-dâgh* } (advl. pron. and adv.) what like? what kind
- قانداق *qan-dâq* } of? Also, how?
- قاندررماق *qan-dur-'t-maq* (v. caus. redup.) to cause to satisfy the thirst (of another).
- قاندرрмақ *qan-dur-maq* (v. caus.) to cause (any man or animal) to satisfy (his or its) thirst.
- قاندين *qan-din* (adv.) from whence?
- قانليق *qân-liq* (adj.) spotted with blood.

- قانماق *gan-maq* (v. intr.) to quench one's thirst; to satisfy one's desire for sleep [governs *su* or *uïqu* with *gha*].
- قانگنارتماق *qangtar-'t-maq* (v. caus.) to cause to fasten a horse's head up short.
- قانگنارماق *qangtar-maq* (v. tr.) to fasten a horse's head up short by a bearing-rein, or by hitching the reins over the peak of the saddle.
- قانگشار *qangshār* (subs.) the bone of the nose, the part midway between the bridge and the tip.
- قانگشارلیق *qangshār-liq* (adj.) hook-nosed.
- قانه *qanah* } (adv.) where? Also used as an exclamation equi-
- قانی *qani* } valent to our 'well'
- قار *qāo* (subs.) tinder (made of fungi or of the down of a kind of flowering reed), КН.
- قارچاق *qāurchaq* (subs.) a doll, an image for children to play with. Also, the figures in a kind of Punch and Judy show, which are dressed up on a man's fingers, who hides behind a cloth and manipulates these marionettes, making speeches for them in a feigned or falsetto voice produced by holding a small tube in his month, КН., (in Yarkand pronounce *qorchaq*).
- قارغە *qāurgħa* (subs.) a rib.
- قارماچ *qāur-mach* (subs.) parched or roasted grain.
- قاررماق *qāur-maq* (v. tr.) to roast (grain), to fry.
- قاوغە *qāughah* (subs.) a leather pail for drawing water.
- قارغون *qāughun* (subs.) a melon.
- قاي *qai* (pron.) which, what [only used in composition as *qai-da*, *qai-si*].
- قاياش *qayash* (subs.) [in composition with *tuq-qan* or *uruq*] relation, relative.
- قايان *qā'-yān* (adv.) which side? Used also with the affixes *da*, &c. As *qā'-yān-da* "on which side;" *qā'-yan għa* "to which direction;" *qā'-yān-i-da* "on which side of it."

- قايتا *qaita* (subs. and adj.) a fresh beginning ; beginning afresh
[*qaitabâsh-din yessadim* "I made it over again (lit. 'from a fresh head') or *qaita din yessadim* (lit. "I made it from a fresh beginning")].
- قايتارماق *qait-ar-'t-maq* (v. caus. redup.) to cause to turn back (tr.).
to order any one to be turned back.
- قايتارماق *qait-ar-maq* (v. caus.) to cause to return, to turn back (tr.).
- قايتاقي *qaitaqi* (subs.) the turned-back edge of any garment (as a European coat-collar).
- قايتام *qaitam* (adv.) on the contrary.
- قايتماق *qait-maq* (v. intr.) to return, to come or go back, КН.
- قاичи *qaiçhi* (subs.) scissors, shears.
- قايدا *qai-da* (adv.) where ?
- قايداغ *qai-dâgh* (adjl. pron. and adv.) what like ? also, how ?
- قايداغراق *qai-dâgh-râq* (adv.) how again ? or how further ? [lit. the comparative of 'how ?' to which the reply would be 'better' or 'worse,' not simply 'well' or 'ill'].
- قايداқ *qai-daқ*. The same as *qai-dâgh*.
- قايراتماق *qaira-'t-maq* (v. caus.) to cause to whet or sharpen.
- قاирақ *qaira'q* (vl. subs.) a whet-stone, a rough hone.
- قاирамақ *qaira-maq* (v. tr.) to whet, to sharpen on a stone, "*re-passer*."
- قايرتماق *qayir-'t-maq* (v. caus.) to cause to retrovert forcibly.
- قايرдан *qa'-yer-dan* (adv.) from what place ? whence ?
- قايرليқ *qa'-yer-liq* (adj.) belonging to what place ? of what place ?
- قايرмақ *qayir-maq* (v. tr.) to retrovert forcibly, to force back (the arm or any long-shaped object) into an unnatural position.
- قايرилмақ *qayir-il-maq* (v. pass.) to be retroverted.
- قايرинмақ *qayir-in-maq* (v. refl.) to retrovert itself.
- قايسي *qai-si* (pron.) which of them ? who amongst them ? [the *si* is the possessive affix of the 3rd person].
- قايش *qaiçh* (subs.) strap-leather.

قايشقورماق *qāish-tur-maq* (v. caus.) to cause to be retroverted forcibly, to retrovert forcibly (same as *qayir-maq*) ; also, to cause to use continuous efforts.

قايشماق *qāish-maq* (v. intr.) to be retroverted forcibly ; also, to use continuous efforts.

قاىغو *qāighu* (subs.) sorrow, grief [? vl. subs. from an obsolete verb *qāi-maq*].

قاىغورتماق *qāighur-'t-maq* (v. caus.) to cause to be sorrowful.

قاىغورماق *qāighur-maq* (v. intr.) to be sorrowful, to grieve.

قاىغولىق *qāighu-liq* (adj.) sorrowful, grief-laden.

قايماتاق *qāimaq* (subs.) cream [often prepared by warming the milk, as in the preparation of Devonshire cream].

قاين *qāin* (subs.) the birch-tree (whose bark is in sheets like paper).

قاين *qāin* (adj., used only in comp.). Answers to our phrase " ——— in-law." E. g. *qāin-ata* "father-in-law," *qāin-ana* "mother-in-law."

قاينىڭ *qāiŋ* (subs.). For *qāin* "a birch-tree."

قايناتماق *qāina-'t-maq* (v. caus.) to cause to boil, to boil (tr.).

قايناماق *qāina-maq* (v. intr.) to boil (as water).

قايرىماق *qayur-maq*. For *qayir-maq* (which see).

قاىۇق *qayūq* (adj.) nasty, having a bad taste.

قاىۇماق *qāyu-maq* (v. intr.) to swim (said of one's head).

قاىۇماق *qāyu-maq* } (v. tr.) to stitch, to hem-stitch.

قاىيماق *qāyi-maq* }

قبات *qabat*. The same as قابات.

قبارماق *qabar-maq*. КН. } The same as قاپارماق.

قپارماق *qapar-maq*

قبابماق *qaba-maq*. The same as قبابماق.

قپ *qip* a particle used before *qizil* to signify "intensely," "very."

قپلان *qaplān* (subs.) an ounce (or white leopard).

قات *qat*. The same as قات.

- قاتىغ *qatigh* } The same as قاتىق, فاتىع.
 قاتىق *qatiq* }
 قاتىم *qatim*. The same as قاتىم.
 قىچىرماق *qichir-maq* (v. tr.) to call, to summon.
 قىچىرماق *qichqir-maq* (v. intr.) to shout.
 قىچى *qichi* (subs.) mustard.
 قىچىشقا *qichish-qaq* (subs.) the itch.
 قىچىشماق *qichi'sh-maq* (v. recip.) to itch all over.
 قىچىماق *qichi-maq* (v. intr.) to itch (said of others).
 قىچىنماق *qichi-'n-maq* (v. refl.) to itch (said of the person who speaks).
 قدا *quda* (see) (فودا).
 قۇر *qür* (prond. *qirr*) (subs.) a ridge, an edge formed by two planes meeting at an angle.
 قارا *qarâ* (adj.) black.
 قارالاماق *qarâl-'maq*. The same as قارالاماق.
 قارانغو *qarâ-'n-maq*. The same as قارانغو.
 قۇردۇرماق *qür-dür-maq* (v. caus.) to cause to scrape, &c.
 قۇرغۇچى *qir-ghu-chi* (subs.) a turner, a person who works with a lathe. [From قۇرماق.]
 قۇرغول *qirghol* (subs.) a pheasant (of a species resembling the European, but named *Phasianus Shawii* in Elliott's Book of Pheasants).
 قىر *qir* (num.) forty.
 قىرقالان *qir-qâlan* (num. subs.) a group of forty.
 قىرئىچى *qir-q-inchi* (num. adj.) fortieth.
 قۇرماق *qür-maq* (prond. *qirr-maq*) (v. tr.) to scrape, to scratch off, to scratch out; to turn (any article by means of a lathe, *quasi* "to scrape off the outer layers"); also, to destroy utterly, to "wipe out;" also, to spend (time).
 قىرى *qarri* (subs.) an old woman.
 قىرىلماق *qür-il-maq* (prond. *qirr-il-maq*) (v. pass.) to be scraped off; to be turned (in a lathe); to be utterly destroyed ("wiped out").

قىز *qiz* (subs.) a maid, a virgin, a damsel; also, a daughter.

[? From a root signifying "redness" for "modesty."

See *qizarmaq*.]

قىزارتماق *qiz-ar-t-maq* (v. caus.) to cause to redden, to make red.

قىزارماق *qiz-ar-maq* (v. intr.) to redden, to become red, to blush.

[? From the same root as above, see also *qiz-maq*.]

قىزان *qazan*. The same as قازان.

قىزاq *qazaq*. The same as قازاق.

قىزماق *qiz-maq* (v. intr.) to become hot or warm; also metaph., to become or to be eager [in Uighur it seems to mean "to redden" see Vambéry], KAZ.

قىزىتماق *qiz-it-maq* (v. caus.) to cause to be hot or eager.

قىزىق *qiziq* (vl. subs.) warmth, eagerness, vivacity [from *qizimac*].

قىزىل *qizil* (adj.) red. [? A passive form (in *il*) from a root signifying 'heat' as well as 'redness,' which would thus be the common origin of *qiz-maq*, *qiz-ar-maq*, *qiz-il* and *qiz*.] (See also *yāshil*.)

قىزىماق *qizi-maq* (v. intr.). The same as *qiz-maq*.

قىزىندۇرماق *qiz-in-dur-maq* (v. refl. caus.) to cause to warm one's self.

قىزىنماق *qiz-in-maq* (v. refl.) to warm one's self.

قول *qul* (subs.) a slave.

قوللىق *qul-luq* (subs.) slavery, service. Also used as a complimentary reply to congratulations, in the name of "your servant" or "my service to you."

قىمتۇ *qamtu* (adv.) in company.

قىمىز *qimiz* (subs.) an intoxicating liquor made from mare's milk, KAZ.

قىانات *qanāt*. The same as قانات.

قوالاتماق *quala-t-maq* (v. caus.) to cause to pursue; to cause to drive away, KAZ.

قوالاماق *quala-maq* (v. tr.) to pursue; to drive away, KAZ.

قوانجى *quanjī* (subs.) happiness.

- قوانماق *quan-maq* (v. intr.) to be happy, to be pleased.
- قوبوز *qûbuz* } (subs.) a Jew's harp. Also, a rough guitar with
 قوپوز *qupuz* } horse-hair strings. Also, the inside of the cheek.
- قوبوزاق *qubuzâq* } (subs.) the bark of trees.
 قوبوق *qubuq* }
- قوپارتماق *qup-ar-'t-maq* (v. caus. redup.) to cause to arouse.
- قوپارماق *qup-ar-maq* (v. caus.) to cause to stand up, to arouse.
- قوپال *qopal* (adj.) rude, unpolished (used either of men or things).
- قوپماق *qup-maq* (v. intr.) to rise up, to arise.
- قوپوق *qupuq* (subs.) a term used in gambling with sheep's knuckle bones, implying success. As *maning qupuq-um kelde* "I have won the toss," *qupuq maning-ki* "the toss is mine (I have won it)."
- قوت *qut* (subs.) blessing, happiness.
- قوتاز *qotaz* } (subs.) a yak (*Bos grunniens*').
 قوتاس *qotas* }
- قوتان *qutan* (subs.) a sheep-fold; a place where a flock of sheep is collected to pass the night, KAZ.
- قوتقارماق *qut-qâr-mâq* } (v. caus.) to cause to be free, to release.
 قوتقازماق *qut-qâz-mâq* } [From an obs. *qut-maq*.]
- قوتلوق *qut-laq* (adj.) blessed.
- قوتور *qotur* (subs.) the itch.
- قوتورماق *qutur-maq* (v. intr.) to go mad (of a dog), to be rabid.
- قوتولدورماق *qut-ul-dur-maq* (v. caus.) to cause to become free, to release.
- قوتولماق *qut-ul-maq* (v. pass.) to be made free, to be released.
 [From an obs. *qut-maq*.]
- قوچاق *quchaq* (subs.) an armful, as much (of any thing) as can be embraced in the arms. [From *quch-maq*.]
- قوچاقلاشماق *quchaq-la-'sh-maq* (v. recip.) to embrace one another.
- قوچاقلاماق *quchaq-la-maq* (v. tr.) to embrace, to take in the arms.
- قوچقاچ *quohqach* (subs.) a small bird (of any sort).

قوچقار *quchqdr* (subs.) a ram.

قوچماق *quch-maq* (v. tr.) to embrace, to take in the arms.

قوچورماق *quch-ur-maq*. The same as *qâchurmaq*.

قوچوشماق *quch-ush-maq* (v. recip.) to lie in one another's arms.

قودا *quda* (subs.) a person standing in the relationship of father-in-law to one's son or daughter; one of two fathers whose children have intermarried.

قودوق *quduq* (subs.) a well.

قور *qurr* (subs.) a garter, a tape for fastening up leggings.

قور *qûr* (subs.) a balance, a remainder (of goods or money).

قورا *qura* (subs.) a space enclosed by hurdles or railings; a fold, a pen.

قورام *qoram* (subs.) ground covered with large blocks of stone (fallen from the mountains). [? The origin of *qara-qoram*.]

قوراماق *qura-maq* (v. tr.) to make patch-work, to make a garment &c., by sewing together small patches of stuff.

قوراماق *quwura-maq* (v. intr.) to dry up hard (as a skin exposed to the sun, &c.), KAZ.

قورباشي *qurbashi* (subs.) a chief police official, a 'Kotwal.'

قورت *qurt* (subs.) a worm, a grub.

قورتلاماق *qurt-la-t-maq* (v. caus.) to cause or allow to breed worms (of meat &c.).

قورتلاماق *qurt-la-maq* (v. intr.) to breed worms (of meat &c.).

قورچاق *qurchaq*. The same as *qâurchaq*.

قورچي *qur-chi* (subs.) a superintendent of a magazine. [See *qurkhana* and *qur*.]

قورخانه *qur-khâna* (subs.) a magazine (for powder and balls).

قورداش *qur-dash* (subs.) a contemporary.

قوردوم *qurdum* (subs.) a place where any stream disappears (in the sand, &c.). [The Yarkand River is said to disappear in a district called *kurdum-kâk*.]

قورساق *qursaq* (subs.) stomach, belly.

قورساقداش *qursaq-dâsh* (subs.) a brother or sister by the same mother
[lit. "womb-fellow"].

قورساقلاش *qursaq-lash*. The same.

قورشاتماق *qursha-'t-maq* (v. caus.) to cause to surround.

قورشاماق *qursha-maq* (v. tr.) to surround, to encircle.

قورغانشون *qurghashun* (subs.) lead.

قورغان *qurghân* (subs.) a fort, a fortress.

قورغانچه *qurghan-chah* (subs.) a small fort, a redoubt.

قورقماق *qurq-maq* (v. intr.) to fear, to be afraid.

قورقۇتماق *qurq-ut-maq* (v. caus.) to cause to fear, to frighten.

قورقۇنچىلىق *qurqu-'nj-liq* (adj.) fearful, causing fear, frightful.

قورقۇنچاق *qurqu-'nchak* (adj.) fearful, afraid, cowardly.

قورقۇنچى *qurqu-'nchi* (vl. subs.) fear, fearing.

قورۇماق *qûrur-maq* (v. tr.) to fledge.

قورۇت *qurut* (subs.) dried curds.

قورۇتماق *quru-'t-maq* (v. caus.) to cause to dry.

قورۇچ *quruch* (subs.) steel.

قورۇغ *qurugh* } (vl. adj.) dried, dry.

قورۇق *quruq* }

قورۇق *qûruq* (vl. subs.) a field of growing grass, fenced round to prevent its being grazed on. [From *qûru-maq*.]

قورۇقماق *quruq-maq*. The same as *qurq-maq*.

قورۇم *qurum* (subs.) soot, the black deposit of smoke.

قورۇمساق *qurum-saq* (subs. and adj.) a miser; miserly, stingy. [? From *quru-maq* "to dry up" in the same way as *bolum-saq* "likely to become (useful)," modern phrase "a likely boy," from *bol-maq* "to become," &c.]

قورۇوماق *quru-maq* (v. intr.) to become dry, to dry up.

قورۇوماق *qûru-maq* (v. tr.) to scare away birds and beasts from a

قورۇن *qürün*. The same as *kurum*, Y. [field.]

قورۇنماق *quru-'n-maq* (v. refl.) to dry one's self.

قورۇنماق *quru-'n-maq* (v. refl.) to guard one's self, to protect one's self (from the mud on a road, from flies or mosquitoes, &c.).

قوز *q6z* (subs.) hot embers or cinders.

قوزغاماق *quzgha-'t-maq* (v. caus.) to cause to move; (tr.) to cause to shift.

قوزغالماق *quzgha-'l-maq* (v. pass.) to be moved, to be shifted.

قوزغاماق *quzgha-maq* (v. tr.) to move, to shift. [self.

قوزغانماق *quzgha-'n-maq* (v. refl.) to move one's self, to shift one's

قوزغون *quzghun* (subs.) a raven (supposed by the Turks to live a thousand years).

قوزوق *quzuq* (subs.) a peg.

قوزي *qozı* (subs.) a lamb.

قوش *qush* (subs.) a bird.

قوش *qosh* (subs.) a pair; also, a household, a set of people using one fire, [chiefly used however in the sense of people on a journey: e. g., *bu kârwan nichah qosh* "how many tents or fire (does) this caravan (consist of)"]. Also, quarters, lodgings.

قوش *quwush* (adj.) hollow.

قوشباشي *qosh-bashi* (subs.) the headman or responsible head of each set of merchants, &c., composing a caravan.

قوشبيگي *qosh-bégi* (subs.) the title of a high official 'Lord of the Household,' who acts for the king in his absence.

قوشتورماق *qosh-tur-maq* (v. caus.) to cause to join; (tr.) to cause to unite.

قوشقون *qoshqun* (subs.) a crupper.

قوشماق *qosh-maq* (v. tr.) to join, to unite, to put together.

قوشماق *qoshmaq* (adj.) united, joining (used only of the humps of a two-humped camel when they almost coalesce).

قوشنا *qosh-na* (subs.) a neighbour; also, a person allowed to live in some part of one's house.

قوشناچ *qushnâch* (subs.) a soothsayer, or foreteller of future events.

قوشنانجي *qushnanji* (subs.) an educated woman; also, a female teacher.

قوشني *qosh-ni*. The same as *qoshna*.

- قوشورماق *qosh-ur-maq*. The same as *qoshturmaq*.
 قوشوق *qoshuq* (subs.) a ladle.
 قوشوق *qosh-uq* (vl. subs.) poetry, verse, a poem, a song. [From *qosh-maq* "to put together".]
 قوشولماق *qosh-ul-maq* (v. pass.) to be joined, to be put together, to be united.
 قوشون *qoshun* (subs.) an army.
 قوغا *qughā* (subs.) a rush (a kind of grass), KAZ.
 قوغلاتماق *qughla-'t-maq* (v. caus.) to cause to pursue.
 قوغلاماق *qughla-maq* (v. tr.) to pursue, to follow.
 قوغورچاق *qughurchaq* (subs.). The same as *qāurchaq*.
 قوغون *qughun* (subs.) a melon.
 قول *qol* (subs.) a hand.
 قول *qol* (numl. subs.) a hundred thousand, KAZ.
 قول *qol* (subs.) a broad open valley between mountains;
 ساریق قول or ساریقول *Sariq-qol* or *Sariqol*: "yellow valley;" the name of a valley and small province in the angle between Pamir and the Muzbaq Range (a name often mis-spelt Sirikul, and wrongly applied by Europeans to a Lake on Pamir). کینگ قول *King-qol* "wide valley;" the name of a place on the road between Sariqol and Kāshghar, KIRGHIZ, KAZ.
 قولا *qula* (adj.) reddish dun (the colour of a horse).
 قولاق *qulaq* (subs.) an ear. [Before affixes the *q* usually becomes *gh*, as *qulagh-ing* "thine ear".]
 قولاقچه *qulaq-chah* (subs.) a cap with flaps covering the ears.
 قولاقچون *qulaq-chun* (subs.) a cap with long side (ear) lappets which can be crossed under the chin.
 قولان *qulan* (subs.) a wild ass [*Equus hemionus*], (from *qula*).
 قولاي *qulai* (adj.) easy, propitious.
 قولتورماق *qulturmach* (subs.) a crutch.
 قولتوق *qultuq* (subs.) the arm-pit. [arms.
 قولتولتاق *qultuq-la-'t-maq* (v. caus.) to cause to take under the

قولتوقلاماق *qultuq-la-maq* (v. tr.) to take under the arm, *viz.*, either to support a person in walking by placing one's hand under his arm, or to carry any object under one's arm.

قولچىلىق *qul-chi-liq* (subs.) slavery, servitude.

قوللوق *qul-luq* (subs.) For قللوق.

قولوف *quluf* (subs.) a lock, a padlock, P.

قولون *qulun* (subs.) a colt, a foal.

قولونلاماق *qulun-la-maq* (v. intr.) to foal.

قوم *qum* (subs.) sand.

قومالاق *qumalaq* (subs.) sheep's dung.

قومتوخى *qum-tokhi* (subs.) *Podoces Hendersonii* (lit. 'sand-fowl').

قومغان *qumghan* (subs.) a basin.

قوموچاق *qumuchaq* (subs.) a frog. [The people of Darwâz call it "bulbul-i-Hazrat Ali" (the nightingale of Holy Ali).]

قوموش *qumush*. For قامىش.

قوناق *qunaq* (subs.) a guest; also, a night's lodging. [From *qun-maq*.]

قوناق *qonaq* (subs.) Indian-corn, maize.

قونان *qunan* (adj. and subs.) rising three years old; also, any four-legged animal of that age.

قوندورتماق *qun-dur-t-maq* (v. caus. redup.) to cause to give a night's lodging.

قوندورماق *qun-dur-maq* (v. caus.) to cause or allow to sit or lie, to give a lodging-place, to house; also, to cause to lodge (as a falconer taking up a hawk on his wrist).

قوندوز *qun-duz* (subs.) a small animal whose fur is much in request, (? sable); also, fur of that animal.

قونگراغۇ *qungraghū* (subs.) a bell.

قونگراق *qungraq* (subs.) a little bell attached to an animal.

قونگور *qungur* (adj.) dun. [*Qungur-at* 'dun horse', corrupted to Qungrat, is the name of one of the divisions of the Middle Horde of Qazzaqs, also of a town in Khiva.]

قونگوز *qunguz* (subs.) a black beetle.

- قونگى يوغان *qungi-yoghan* (subs.) a boil.
- قونماق *qun-maq* (v. intr.) to lodge, to put up ; also, to dismount.
- قوي *qoi* (subs.) a sheep.
- قوياش *qüyash* (subs.) the sun [rare].
- قوياق *quyaq* (adj.) thick, viscous [of fluids].
- قويان *quyan* (subs.) a hare, КН. КАЗ.
- قويانگ *quyang* (subs.) a moveable subcutaneous tumour.
- قويچى *qoi-chi* (subs.) a shepherd.
- قويدورماق *qoi-dur-maq* (v. caus.) to cause to place, to cause to put, to cause to set aside, to cause to leave, to cause to abandon.
- قويروق *quyirug* (subs.) a tail.
- قويما *qüi-ma* (adj.) cast (of metal). [abandon.]
- قويماق *qoi-maq* (v. tr.) to place, to put, to set aside, to leave, to
- قويماق *qüi-maq* (v. tr.) to pour, to cast (metal).
- قويماق *qüi-mâq* (subs.) a cake cooked in butter, a butter-cake.
- قويوشقون *quyushqun* (subs.) a crupper.
- قويوشماق *qoi-ush-mâq* (v. recip.) to leave one another.
- قويوشماق *qüi-üşh-maq* (v. recip.) to pour from both sides, to pour together.
- قويۇق *quyuq* (adj.). The same as *quyaq*.
- قويۇن *qoyün* (subs.) the breast of the robe (used as a receptacle or pocket). [? From *qoi-maq*.]
- قويۇن *qüyün* (subs.) a whirlwind, a 'devil.'
- قويى *qüyi* (subs. and adj.) "lowness," low ; e. g., *aning quyi-sida* "below it," *Hindustân Yarkand-din qüyi* "India is lower than Yargand."
- قە *qah* (post-pos.) to.
- قى *qi*. (See Gram. p. 262, Pronouns.)
- قىيا *qia* (adj. and subs.) slanting, sloping ; also, a road slanting up a hill-side or on the face of a cliff. [*Sariqa-qia* "yellow slant," the name of a part of the Upper Qàrà-kàsh Valley ; corrupted to *Sariqia*.] From *qi-maq*.

- قیاق *qiaq* (subs.) a sharp-edged rush.
- قیان *qayan* (adv.) which way, on which side. [For *qaï yân.*]
- قیپچاق *qipchâq* (prop. name) one of the divisions of the Middle Horde of Qazzaqs. *Dasht-i-qipchâq* the desert north of the Jaxartes and of Khokand.
- قینیق *qitiq* (subs.) tickling.
- قینیقلاتماق *qitiq-la-'t-mâq* (v. caus.) to cause to tickle.
- قینیqlamaق *qitiq-la-mâq* (v. tr.) to tickle.
- قیچیرماق *qichir-mâq* } (v. tr.) to call, to cry out.
- قیچقیرماق *qichqir-mâq* }
- قیچی *qichi* (subs.) mustard.
- قیچیش *qichish* (vl. subs.) a tickling, an itching.
- قیچیشقاق *qichish-qaq* (subs.) the itch.
- قیچیشماق *qichi-'sh-maq* (v. recip.) to itch all over.
- قیچیق *qichiq* (vl. subs.) a tickling.
- قیچیماق *qichi-maq* (v. intr.) to experience a tickling or itching sensation, to itch.
- قیر *qir* (subs.) a ridge, the meeting line of two plane surfaces.
- قیر *qir* (subs.) water-proof plaster (applied to a bathing-place, tank, &c.)
- قیرا *qira* (subs.) a ridge, an edge.
- قیراغاج *qairaghach* [? for *qara-yaghach* 'black-wood'], an elm.
- قیراق *qiraq* (subs.) an edging (of any stuff).
- قیرلق *qairaq* (subs.) a whet-stone, a hone.
- قیرال *qirdâl* (subs.) a white frost.
- قیراو *qirdo* (subs.) a white frost; a camp of nomads (Kirghiz, &c.).
- قیرغاق *qirghâq* (subs.). The same as *qiraq*.
- قیرغاول *qirghaol* (subs.) a pheasant. [The same as قیرغاول.]
- قیرغای *qirghâi* (subs.) a small species of hawk.
- قیرغوج *qir-ghüch* (subs.) a scraper.
- قیرغون *qirghun* (subs.) slaughter (in battle).
- قیرغی *qirghi*. The same as *qirghai*.

- قيرغيز *Qirghiz* (prop. name) a race of nomad Turks living in the mountains, from the south of Yarkand round by Pamir and Alaï to the north of Kàshghar and Aksu (the Issik-kul district). They are called by the Russians *Tehorny Kirghiz* (black Kirghiz), also Mountain Kirghiz, to distinguish them from the Qazzaqs of the plains, to whom also (though incorrectly) the name of Qirghiz is applied by the Russians.
- قيرق *qirq* (num.) forty. More often قرق.
- قيرماق *qir-maq* (v. tr.) to scrape, to shave, to erase; also, to kill, [see قُرماق]; also, to spend (time).
- قيريق *qiriq* (vl. adj.) scraped, threadbare, worn down (as the fur of a skin, &c.).
- قيريقْتورماق *qiriq-tur-maq* (v. caus.) to cause to shear, &c.
- قيريقماق *qiriq-maq* (v. tr.) to shear, to cut with a pair of scissors.
- قيريلماق *qir-il-maq* (v. pass.) to be scraped, to be turned (in a lathe), to be shaved, to be destroyed utterly.
- قيريندي *qirindi* (subs.) scraping (of leather, a cooking pot, &c.).
- قيز *qiz* (subs.) maiden; also, daughter. The same as قز.
- قيزارماق *qiz-ar-maq*. See قزارماق.
- قيزغانچاق *qizghan-chaq* (adj.) grudging, selfish, churlish.
- قيزغانماق *qizghan-maq* (v. tr.) to grudge, to be churlish, to stint.
- قيزيقماق *qizi'q-maq* (v. intr.) to be eager or hot (over anything).
- قيزيق *qizi'q* (adj.) hot, also eager. Same as قزيق.
- قيزيل *qizil* (adj.) red. Same as قزيل.
- قيزيماق *qizi-maq* (v. intr.) to become hot; also, to become eager. Same as قزيماق.
- قيستانماق *qista-'t-maq* (v. caus.) to cause to become tight or pressed.
- قيستانماق *qista-maq* (v. tr.) to tighten, to press; also, to importune.
- قيستورماق *qis-tur-maq* (v. caus.) to infix, to stick into (as a flower into the cap).
- قيسفا *qisqa* (adj.) short.
- قيسقارتماق *qisqa'r-t-maq* (v. caus.) to cause to be short, to shorten.

قيسقارماق *qisqa'r-maq* (v. intr.) to become short.

قيسماق *qis-mâq* (v. tr.) to press (sideways).

قيسماق *qismâq* (subs.) a gin (for catching animals).

قيسيلماق *qis-il-maq* (v. pass.) to be pressed.

قيش *qish* (subs.) winter.

قيشايتماق *qishai-'t-maq* (v. caus.) to cause to be crooked.

قيشايتماق *qishai-maq* (v. intr.) to be or become crooked.

قيشلاق *qish-laq* (subs.) lit. winter-quarters; also, a village [probably so called from having originally only been occupied in winter by the Central Asiatic tribes]; (opposed to *yaï-laq* "summer-quarters or pasturage," answering to the Swiss word 'alp').

قيشلىق *qish-liq* (adj.) belonging to or destined for the winter.

قيشلىق *qishiql* (adj.) crooked.

قيقرماق *qiqr-mâq* (v. intr.) to try to shout without being able to produce a loud sound (as people afflicted with goitre).

قىل *qil* (subs.) horse-hair (for the tail).

قىلدورماق *qel-dur-maq* (v. caus.) to cause to do.

قىلغوجي *qel-ghu-chi* (vl. subs.) a doer.

قىلماق *qel-maq* (v. tr.) to do [very common in composition].

قىلنماق *qel-in-mâq* (v. pass.) to be done.

قىلىچ *qilich* (subs.) a sabre.

قىلىشىماق *qel-ishi-maq* (v. recip.) to do in company, to do one another [in composition with another verb].

قىلىغلىق *qeligh-liq* (vl. adj.) done.

قىلىق *qel-iq* (vl. subs.) the doing.

قىلىقلىق *qeliq-liq* (vl. adj.) doing (well), behaving properly; also sometimes used for *qelighliq*.

قىما *qima* } (subs.) mince-meat.

قىماچ *qimach* }

قىمات *qimat* (adj.) dear, highly-priced. [From A.]

قىتماق *qi-maq* (v. tr.) to trim, to cut slanting (generally for the purpose of making a side of anything square with the

other sides; the slant being considered with reference to the existing edge).

قىماق *qäimäq* (subs.) cream.

قىماق *qüimaq* (subs.) a butter-cake.

قىمتچىلىك *qimat-chi-liq* (subs.) dearness, scarcity, A. T.

قىمىرلاتماق *qimir-la-'t-maq* (v. caus.) to cause to crawl.

قىمىرلاماق *qimir-la-maq* (v. intr.) to crawl, to creep, to move.

قىن *qin* (subs.) a scabbard, a sheath.

قىيُن *qiyün* (adj. and subs.) difficult, troublesome; also, a painful punishment, torture.

قىناتماق *qina-'t-maq* (v. caus.) to cause to torture.

قىنالماق *qina-'l-maq* (v. pass.) to be tortured; also, to experience difficulty or pain (in doing anything).

قىناماق *qina-maq* (v. tr.) to torture; also, to give trouble or pain.

قىنغراق *qinghräk* (subs.) a large knife, a hanger.

قىنغرايتماق *qinghr-ä-'t-mäq* (v. caus.) to cause to be crooked, to make crooked.

قىنغرايماق *qinghr-äi-mäq* (v. intr.) to become crooked.

قىنغور *qinghür* (adj.) crooked.

قىياق *qiyäq* (subs.) a sharp bulrush.

قىيماق *qayi-maq* (v. intr.) to swim (said of the head).

قىيىن *qiyin* (subs.). The same as *qiyün*.

قىيىندى *qiyin-di* (subs.) a cutting of cloth (remaining from the cutting out of a garment).

قىيىق *qiyeq* (adj.) crooked.

ك ك

$\left. \begin{array}{l} \text{ك} \text{ ka} \\ \text{ك} \text{ ga} \end{array} \right\} \text{ (post-pos.) to, onto, into, at (with a sense of 'motion')}$
 [written also *gha* and *ka*] *kitäb-ga pittî* = "he wrote in (to) the book;" but *kitäb-da oqudi* = "he read in the book"].

- كاپ *kap* (subs.) a case or cover.
 كاپتاك *kaptak* (subs.) a playing ball.
 كاپسيز *kap-siz* (adj.) impudent (boy) [like a 'gamin'].
 كاپشاتماق *kâpsha-'t-mak* (v. caus.) to cause to chew the cud, to cause to chatter.
 كاپشاماق *kâpsha-mak* (v. intr.) to chew the cud; also (more commonly), to chatter, to babble.
 كاپشوك *kapshuk* (vl. subs.) a chatter-box, a prattler.
 كاپكى *kapki* (adj.) gossiping, talkative.
 كاروان *karioân* (subs.) a caravan; also applied to any individual merchant, a member of a caravan, P.
 كاريز *kâriz* (subs.) a subterranean water-course [formed by digging a line of wells at certain intervals on a hill-slope, connecting the bottoms of these wells by small tunnels; as the foot of the slope is reached the wells get less and less deep till at last the water-course emerges into the open air; in this manner springs at the foot of the hills are tapped and brought to the surface of the land at a lower level. In Eastern Turkistân these *kariz* are found near Turfân only], P.
 كاسكى *kaski* (adj. and subs.) idle, gossiping; also, an idler.
 كاسه *kasah* (subs.) a cup (of earthenware), P.
 كاشغر *Kâshghar* (prop. name) the capital of Eastern Turkistân. [This is the spelling usual among the Western Turkistanis, and which has now been adopted in the coinage of the reigning Amîr.]
 كاشقر *Kâshqar* (prop. name). The same. [This is the spelling used by the natives of the country both in their every day transactions, and also in their books. It is spelt *Qâshqar* in the 'Kudatku Bilik', an ancient Uighur poem written in A. H. 462 or A. D. 1069, and lately published with a translation by Prof. Vámbéry.]
 كاشكى *kâshki* (interj.) Would to God! P. (?)
 كا *káká* (subs.) an egg.

- گل *gal* (subs.) throat, Y.
 گال *gāl* (adj.) blunt, Y.
 کالی *ga-li* [a compound affix applied to the root of verbs conveying the sense 'in order to'].
 کالیب *kalib* (subs.) a mould, P.
 کامشوک *kamshuk* (adj. and subs.) having a retreating chin.
 کان *kān* (subs.) a mine, P.
 کاواک *kawak* (subs.) a hole.
 کاوش *kāush* (subs.) slippers. From P.
 کارش *kāush* (subs.) chewing the cud.
 کارشنامک *kāusha-'t-mak* (v. caus.) to cause to chew the cud.
 کارشماک *kāusha-mak* (v. intr.) to chew the cud.
 کاولاتماک *kāola-'t-mak* (v. caus.) to cause to dig.
 کاولاتماک *kāola-mak* (v. tr.) to dig, to excavate.
 کایتماک *kāi-'t-mak* (v. caus.) to cause to be angry.
 کایماک *kāi-mak* (v. intr.) to be angry, to be vexed, to be tired.
 گپ *gap* (subs.) word, speech; a social meeting, a 'conversation,' P.
 کپتاک *kaptak*. The same as کاپتاک.
 کپتر *kaptar* (subs.) a pigeon. From P.
 کپریک *kiprik* (subs.) an eyelash.
 کپشر *kapshar* (subs.) solder; a joint made by soldering.
 From P.
 کپشیک *kapshik* (subs.). The same as کاپشویک.
 کپکیر *kapkir* (subs.) a ladle, a skimmer. From P.
 گپلاشماک *gap-la-'sh-mak* (v. recip.) to converse.
 کپیش *kapish* (subs.) slippers. From *kafsh*, P.
 کتاک *katak* (subs.) a fowl-house.
 کتمان *kitman* (subs.) a hoe.
 کتمانلاماک *kitman-la-mak* (v. tr.) to hoe.
 کته *katta* (adj.) great. [The eldest son of the Amir of Bokhāra always bears the title کنرتوره 'Katta-Turah' = 'Great or first Prince'.]

- کج *kaj* (adj.) crooked, specially perverse, P.
 گچ *gaj* (subs.) plaster, mortar.
 کجابه *kajaba* } (subs.) camel's panniers (generally for women
 کجابه *kajawa* } to travel in), P.
 کچکنه *kich'kinah* (adj.) very small, tiny, little [from *kichik-kinah*].
 کچیک *kichik* (adj.) little, small.
 کچیکنه *kichikkina* [contr. from *kichik-kina*] (adj.) very small, tiny, little; also (subs.), a very little, a small quantity.
 کچماک *kech-mak* (v. intr.) to pass through (water, &c.), to wade, to ford; to pass by (a fault), to let pass (one's rights); [governs *din*].
 کچورماک *kech-ur-mak* (v. caus.) to cause to pass through or by, to cause to let pass.
 گدای *gaddi* (subs.) a beggar, a pauper. From P.
 گدایلیق *gaddi-lik* (subs.) poverty, beggary, P. T.
 کر *kar* (adj.) deaf, P.
 کیر *kir* (adj.) dirty, soiled.
 کیر *kurr* (subs.) a cave, a cavern. From A.
 کیرا *kira* (subs.) hire, P.
 کیراچی *kira-chi* (subs.) a letter out on hire, P. T.
 کیراکش *kira-kash* (subs.) a carrier for hire, the owner of a troop of horses, &c. who carries merchandise for hire, P.
 کیرپی *kirpi* (subs.) a hedgehog.
 کیرپیک *kirpik* (subs.). The same as *kiprik*.
 کرقلوق *kar-qulaq* (adj. and subs.) deaf, lit. deaf-eared; also, a deaf man.
 کیرگوزماک *kir-guz-mak* (v. caus.) to cause to enter.
 کرکی *karki* (subs.) an adze.
 کیرماک *kir-mak* (v. intr.) to enter, to come in [governs *gha*].
 کز *küz* (subs.) autumn.

- كُزاتچى *kuzat-chi* (subs.) a guard, a sentry, a care-taker.
 كُزاتماك *kuzat-mak* (v. tr.) to guard, to take care of.
 كُزاماك *kuza-mak* (v. tr.) to cut hair (of a horse's mane, &c.) with a knife.
 گَزَك *gazak* (subs.) smarting (of a wound, caused by cold air or water getting into it).
 گَزَلِك *gazlik* (subs.) a small knife (for paring the nails, &c.).
 كِسَاك *kisak* (subs.) a piece, a portion; (in Eastern Turkistán confined to) a piece of brick.
 كَسَل *kasal* (adj.) ill, unwell. From A.
 كَسِلْمَاك *kes-il-mak* (v. pass.) to be cut.
 كَسْمَاك *kes-mak* (v. tr.) to cut.
 كِسْمَاك *kismak* (subs.) a shot fired backwards from the back of a horse at full gallop, a Parthian shot.
 كَشَن *kishan* (subs.) a chain hobble (for a horse).
 كَشِي *kishi* (subs.) a person, a 'body'; [*kishi* with the negative verb = 'no-body'].
 كَفْتَر *kaftrar* (subs.) a pigeon. [For *kaptar*.] From P.
 كَفَش *kafsh* (subs.) a slipper, P.
 كَفْشَر *kafshar* (subs.) solder, a soldered joint, P.
 كَفْرِيك *kifrik* (subs.) an eye lash. Same as *kiprik*.
 كَفْغِير *kafgir*. For *kaggir*.
 كَل *kal* (subs.) scald-head; also (adj.), hornless (of a cow, &c.).
 كُل *kül* (subs.) ashes, cinders.
 گُل *gul* (subs.) a flower, P.
 كَلَه *kalah* (subs.) a cow; (used also in a general way for horned cattle).
 كَلْتَه *kaltä* (adj.) short.
 كَلْتَاك *kaltak* (subs.) a stick, an Alpenstock.
 كَكْلِيك *kaklik* (subs.) a red-legged partridge, a 'chikor', *Oaccabis pallidus*, Hume.

ککوک *kakkuk* (subs.) a cuckoo.

کُکُک *kuluk* (adj.) winning (applied to the horse that comes in first in a race).

کِم *kim* (conj.) that; also (pron.) who?

کَم *kam* (adj. and adv.) little (in amount), P.

کَمبَغَال *kam-baghal* (adj.) poor, indigent [lit. having nothing to carry under his arm], P.

گُمَان *gumân* (subs.) doubt, suspicion, P.

گُمَانَلِیْک *gumân-liq* (adj.) doubtful, suspicious, suspected; also, *enceinte*, (not implying any concealment of the fact), P. T.

کَمَر *kamar* (subs.) a girdle or waist-belt, P.

کَمَرَسَا *kim-irsa* (pron.) originally, whosoever, whoever [from *kim* 'who' and *irsa* 'may be']; modern usage, a person, any one, some one.

کَمپِیر *kampir* (subs.) an old man, an old woman, P.

کَمچِیلِیْک *kam-chi-lîk* } (subs.) paucity, deficiency, scantiness, scarcity.
کَملِیْک *kam-lîk* }

کَمیَنْمَک *kami-'t-mak* (v. caus.) to cause to become less, to diminish (tr.).

کَمیْمَک *kami-mak* (v. intr.) to become less, to diminish (intr.) P. T.

کَنْت *kant* } (subs.) a village, a place of settled habitations [the
کَنْد *kand* } termination of many names of places, Yarkand, Tashkand, &c.].

کَنْه *kanah* (subs.) a tick. [KH.]

کُوب *kub* or *kup* (adj. and adv.) much, many; also, much, very,

کُوبَه *kuba* (subs.) a mallet.

کُوپ *köp* (subs.) a water-butt.

کُوپَايْتَمَک *köp-ai-'t-mak* (v. caus.) to cause to become much or many, to increase (tr.). [(intr.).

کُوپَايَمَک *köp-ai-mak* (v. intr.) to become much or many, to increase,

كوپتورماك *kup-tur-mak* (v. caus.) to cause to ferment.

گوپچك *gupchak* (subs.) the nave of a wheel.

كوپچوك *kupchuk* (subs.) a saddle cushion.

كوپروك *kupruk* (subs.) a bridge.

كوپلاشماك *kup-la-'sh-mak* (v. recip.) to throng together to any work
[from an unusual *kup-la-mak*].

كوپلوك *kup-luk* (subs.) many-ness, much-ness, a deal of.

كوپماك *kup-mak* } (intr.) to ferment, to swell, to foam.
كپورماك *kupur-mak* }

كوپوك *kup-uk* (vl. subs.) foam.

كوپلاك *kupah-lak* (subs.) a moth, a butterfly.

كوتارتماك *kutar-'t-mak* (v. caus.) to cause to lift.

كونارماك *kutar-mak* (v. tr.) to lift, to raise. [gage.

كوتارناماك *kutar-'n-mak* (v. refl.) to take one's self off bag and bag-

كوناك *kutak* (subs.) a log of wood, a cross-cut portion of a trunk.

كوتان *kütan* (subs.) the gut.

گوججاك *gujjak* (subs.) a shovel.

كوچ *küch* (subs.) strength, power.

كوچ *küch* (subs.) a march, a migration, P.

كوچ *küch* (subs.) a wife.

كوچا *kucha* (subs.) a street or lane in a town, P.

كوجا *kuja* } (subs.) a vegetable broth, КН., КАЗ.
كوچа *kucha* }

كوچاندورماك *küch-a'n-dur-mak* (v. refl. caus.) to cause to exert one's self.

كوچانماك *küch-a'n-mak* (v. refl.) to exert one's self, "s'efforcer," to
make an effort.

كوچايماك *küch-a-i-mak* (v. intr.) to become strong.

كوچلوك *küch-lük* (adj.) strong, powerful, [the title given to the
Naïman prince from whom Changez Khán conquered
the country of Kâshghar].

كوچلوكليك *küch-lük-lik* (subs.) powerful-ness, mightiness.

كوچماك *küch-mak* (v. intr.) to march, to migrate, P. T.

- کوچوک *kuchuk* (subs.) a puppy.
 کوچونماک *kúch-un-mak* (v. refl.) to march one's self about, to wander about without purpose or unnecessarily.
 کودا *kúda* (subs.) a grass of a very nourishing nature growing in the mountains, KAZ.
 کور *kurr* (subs.) a cavern. See کر.
 کوراش *kura'sh* (subs.) a wrestling match.
 کوراشماک *kura-'sh-mak* (v. recip. ?) to wrestle together (in a friendly way).
 کوراک *kura'k* (subs.) a shovel, KHOK.
 کوراماک *kura-mak* (v. tr.) to shovel away, to throw (snow, earth, &c.) up with a shovel.
 کورپا *kürpa* } (subs.) a counterpane, KH. ; also, lamb-skin, Y.
 کورپاه *kürpah* }
 کورساتماک *kúr-sat-mak* (v. caus.) to cause to see, to show.
 کورشپالاک *kur-shapalak* (subs.) a bat, P. T.
 گورکوراک *gurkura'k* (vl. subs.) thunder.
 گورکوراماک *gurkura-mak* (v. intr.) to thunder.
 گورگوزماک *kúr-guz-mak* (v. caus.) to cause to see, to show.
 کورماک *kúr-mak* (v. tr.) to see, to look. "*Obdán kurmaq*" to be pleased.
 کوروشماک *kúr-ush-mak* (v. recip.) to see one another; to have an interview.
 کوروکسیز *kúr-uk-siz* (vl. adj.) un-seemly, un-sightly.
 کوروکلیک *kúr-uk-lik* (vl. adj.) seemly, sightly, well-favoured, well-made.
 کورولماک *kúr-ul-mak* (v. pass.) to be seen.
 کوروملوک *kúr-um-luk* (vl. adj.) worthy of being seen.
 کورونماک *kúr-un-mak* (v. refl.) to make one's self (or itself) seen, to appear.
 کوز *köz* (subs.) an eye.
 کوز *küz* (subs.) autumn.
 کوزا *köza* (subs.) a pitcher, P.

- كوزاچى *küz-at-chi* (subs.) a watchman, a sentry; lit. a looker after.
 كوزاڭماڭ *küz-at-mak* (v. caus.?) to look after, to take care of.
 كوزنىڭماڭ *köz-tik-mak* (comp. v. intr.) to fasten the eyes on; lit. to sew the eyes.
 كوزنىڭماڭ *köz-tig-mak* (comp. v. intr.) to strike (said of the evil eye) [governs *gha*]. Conjugated in the 3rd pers. sing.
 كوزچى *köz-chi* (subs.) a good judge (of horseflesh, &c.). Lit. an eye-er.
 كوزلاماڭ *köz-la-mak* (v. tr.) to keep one's eye upon, to watch from a distance.
 كوزلوك *köz-luk* (subs.) dark spectacles to protect the eye, made of hair; also, the stone of a ring, &c.
 كوزلوك *köz-luk* (adj.) far-sighted, long-sighted; also, gifted with the evil eye [supposed to be a great advantage as the possessor can compel the sale to him of any horse, &c., that he takes a fancy to, under penalty of causing it to die if it be refused to him].
 كوزوكماڭ *köz-ük-mak* (v. intr.). The same as *köz-tig-mak*.
 كوسا *kosa* (adj.) beardless, with only a few straggling hairs on the face, P.
 كوساڭماڭ *kosa-'t-mak* (v. caus.) to cause to stir (the fire).
 كوساماڭ *kosa-mak* (v. tr.) to stir (the fire).
 كوساو *kosao* } (subs.) a piece of wood for stirring the fire, a poker.
 كوساي *kosai* }
 كوش *kaush* (subs.) slippers. The same as كوس &c., P.; also, chewing the cud.
 گوش *gōsh* (subs.) meat [for *gōsht*, P.].
 گوشاماڭ *kausha-mak* (v. intr.) to chew the cud. [Camels are watched before purchase, to see whether they perform this operation properly. If they do not move their jaws laterally at least 25 times before swallowing again, they are not considered to be in good health. In that case it is said: *kaush-i buzuldi* "its chewing is spoilt".]

كونفلاك *kufah-lak* (subs.) a moth, a butterfly. The same as *kupah-lak*.

كونفرک *kufruk* (subs.) a bridge. The same as *kupruk*.

کوفوک *kufuk* (subs.) foam. The same as *kupuk*.

کوک *kok* (subs.) a leather thong forming the pivot of the trellis-work of a Kirghiz tent.

کوک *kök* (subs.) the sky. Also (adj.), blue; also, green.

کوکارنامک *kök-ar-'t-mak* (v. caus.) to cause to be blue, to make blue (or green).

کوکارماک *kök-ar-mak* (v. intr.) to become blue (or green).

کوکراماک *kök-ra-mak* (v. intr.) to thunder.

کوکراک *kökrak* } (subs.) breast, chest.

کوکشی *köksi* }

کوکشون *kokshun* (adj.) aged, decrepit, in extreme old age; also, an intriguer, a mischief-maker.

کوکلاماک *kok-la-mak* (v. tr.) to stitch roughly, to tack; to fasten two wands together by a leather thong passed through them forming a pivot, [the sides of a Kirghiz tent are formed of wands thus fastened together into a trellis-work which can be folded up for travelling, or else extended and set upright round the circumference of a circle, and then covered with felts to form the sides of the tent].

کوکلاماک *kök-la-mak* (v. intr.) to become blue or green, to send forth leaves (of a tree).

کوکماک *kokmak* (subs.) a wild sheep [*Ovis nahura*].

کوکنار *koknâr* (subs.) the poppy, P.

کوکیش *kök-ish* (adj.) bluish, greenish.

کول *kül* (subs.) a lake, a pond, a tank [common in the geography of Central Asia as *Issiq-kül* (warm lake), *kara-kül* (black lake); but not "*Sirikül*" (as sometimes spelt by Europeans), see *Sariq-qol* or *Sariqol*].

کولانماک *kau-la-'t-mak* (v. caus.) to cause to dig.

کولاکه *kulagah* (subs.) shade, shadow.

كولاماك *kau-la-mak* (v. tr.) to dig, to excavate.

كولانگ *kulang* (subs.) daily bread.

كولانگه *kulankah*. For *kulagah*, KAZ.

كولدرماك *kül-dür-mak* (v. caus.) to cause to laugh.

كولكي *külki* (adj.) laughable.

كولماك *kül-mak* (v. intr.) to laugh.

كولموس *kulmus* (adj.) miserly.

كوماك *kumak* (subs.) help, assistance.

كوماك *kumak* (adj.) toothless, whose mouth retreats from want of teeth.

كوماكچي *kumak-chi* (subs.) a helper, an assistant.

كوماكلاشماك *kumak-la'sh-mak* (v. recip.) to assist one another, to do any thing conjointly.

كوموش *kumush* (subs.) silver.

كون *kön* (subs.) the sun ; also, a day.

كون *kün* (subs.) women connected by being the wives of the same husband.

كون *kün* (subs.) common leather (cow's or camel's hide).

كوناولتوروشي *kön-ulturush-i* (subs.) sun-set ; lit. sun's sitting down.

كونباتشي *kön-bätish-i* (subs.) sun-set ; lit. sun's sinking.

كونتوغوشي *kön-tughush-i* (subs.) sun-rise ; lit. sun's birth.

كونجيت *kunjit* (subs.) the grain sesame, P.

كونچقشي *kön-chikish-i* (subs.) sun-rise ; lit. sun's coming.

كونچي *kun-chi* (subs.) a leather-worker.

كونچي *kün-chi* (subs.) a jealous person (? from *kün* the name applied to the connection between two women who are wives of the same husband).

كونچيلاشماك *kün-chi-la'sh-mak* (v. recip.) to be jealous of one another.

كونچيلاماك *kün-chi-la-mak* (v. intr.) to be jealous. [man.

كوندانش *kündash* (adj.) connected by being the wives of the same

كوندررماك *kun-dür-mak* (v. caus.) to cause to become trained, to train to educate.

كوندوز *kön-döz* (subs.) day-time.

- کونگل *küngl* (subs.) heart (chiefly used metaph. for 'mind,' &c.).
 کونگلک *küngl-ak* (subs.) a coat or shirt not opening at the breast.
 کونگلچاک *küngl-çak* (adj.) merciful-hearted.
 کونگللیک *küngl-lik* (adj.) pleasing to the heart; also adv., heartily, with pleasure.
 کونلاشماک *kün-la-'sh-mak* (v. recip.) to be jealous of one another.
 کونلاماک *kün-la-mak* (v. intr.) to be, or become jealous.
 کونلۆک *kön-lök* (subs.) a parasol, a sun-shade.
 کونلۆک *kön-lök* } (adj.) daily.
 کونلیک *kön-lik* }
 کونماک *kun-mak* (v. intr.) to become trained, to receive an education.
 کویا *küya* (subs.) smut, the blackness formed on the outside of a kettle, black (of any kind applied or formed on any object).
 کویا *küya* (subs.) a grub which destroys garments.
 کویاگو *küyagu* } (subs.) a son-in-law.
 کویاو *küyao* }
 کویدورگو *küidurgu* (subs.) a malignant pustule, [so called because it is cured by inserting a hot needle].
 کویدورماک *küi-dur-mak* (v. caus.) to cause to burn (intr.), to burn (tr.), to set fire to.
 کویلاک *küilak* (subs.). The same as *kunglak*.
 کویماک *küi-mak* (v. intr.) to burn, to be burnt.
 کویوک *küy-uk* (adj.) burnt.
 کە *kah* } (post-pos.) to, at, into, onto. [See *kā, gā.*]
 گە *gah* }
 کى *ki* } (relve. affixes). See Gram. p. 312, Syntax.
 گى *gi* }
 کىپاک *kipak* (subs.) bran.
 کىپتورماک *kep-tur-mak* (v. caus.) to cause to become dry, to dry (tr.).
 کىپماک *kep-mak* (v. intr.) to become dry, to dry [said of clothes, &c.].

- كيتارماك *ket-ar-mak* } (v. caus.) to cause to go away, to remove
 كيتكورماك *ket-kur-mak* } [any living being, a spot on a garment,
 كيتكوزماك *ket-kuz-mak* } &c.].
 كيتماك *ket-mak* (v. intr.) to go away.
 كيتورماك *ke-tur-mak* (v. caus. from *kel-muk* corr.) to cause to come,
 to bring.
 كېچ *kech* (adj. and adv.) towards evening, late in the day.
 كېچقورون *kech-qurun* (adv.) late in the day.
 كىچىك *kichik* (adj.) small, little.
 كىچىكنە *kich'k-'inah* (adj.) tiny, little, very small.
 كىچىماك *kich-mak* (v. intr.) to ford, to pass through (a river), to
 pass by (or abandon one's rights). [Governs *din*.]
 كىچورماك *kich-ur-mak* (v. caus.) to cause to ford, to cause to pass
 by, &c.
 كىچە *kechah* (subs.) night.
 كىچىك *kichik*. The same as كىچىك.
 كىچىك *kich-ik* (vl. subs.) a ford.
 كىچىكىكنە *kichik-kinah* (adj.) tiny, little.
 كىچىكىماك *kech-ik-mak* (v. intr.) to delay, to be late.
 كىدورماك *ki-dur-mak* (v. caus.) to cause to put on (clothes).
 كىر *kirr* (adj.) dirty, soiled.
 كىرا *kira*. The same as كىرا.
 كىراک *kiräk* (adj.) necessary, needful [often used as an imper-
 sonal verb in the sense of "it is necessary" with the
 infinitive of another verb].
 كىراکلىك *kiräk-lik* (subs.) the needful, necessities.
 كىرپى *kirpi* (subs.) a hedgehog.
 كىرگوزماك *kir-guz-mak* (v. caus.) to cause to enter, to bring in.
 كىرماك *kir-mak* (v. intr.) to enter, to come or go in.
 كىز *kiyiz* (subs.) felt. See *kighiz*.
 كىزاك *kezak* (subs.) turn, order, succession.
 كىزدورماك *kez-dur-mak* (v. caus.) to cause to walk about.
 كىزماك *kez-mak* (v. intr.) to walk about.

- کیزوک *kizuk* (subs.) a contagious fever.
- کیساک *kesak* (subs.) a piece (of any thing) ; specially, a piece of brick, [prob. from *kes-mak*].
- کیستورماک *kes-tur-mak* (v. caus.) to cause to cut.
- کیسماک *kes-mak* (v. tr.) to cut.
- کیسوک *kes-uk* (vl. subs.) a cut, a notch.
- کیسه *kisah* (subs.) a bag attached to the girdle, P.
- کیشان *kishân* (subs.) a hobble, a short chain fastening together a horse's forelegs.
- کیشی *kishi* (subs. and pron.) a person ; any-one, some-one, *e. g.* *obddn kishi* "a good person ;" *kishi kel-ma-di* "no one came."
- کیک *kiik* (subs.) a wild goat, or sheep, or antelope, [applied generally to all wild animals of those sorts, which are afterwards distinguished by their specific names, as : *sâi-kiik-i*, lit. "desert *kiik*" (*Saiga Tartarica* ?), *tâgh-kiik-i* "mountain *kiik*" (includes ibex, *Ovis Polii*, &c.)].
- کیکچ *kekach* } (adj.) stuttering, stammering, having an impe-
- کیکاک *kekak* } diment in one's speech.
- کیکچلاماک *kekach-la-mak* } (v. intr.) to stutter, to stammer.
- کیکاکلاماک *kekak-la-mak* }
- کیکایتماک *kekai-'t-mak* (v. caus.) to cause to be haughty.
- کیکایماک *kekai-mak* (v. intr.) to be haughty, to give one's self airs.
- کیکرتاک *kikar-tak* (subs.) the wind-pipe.
- کیکرتماک *kikar-'t-mak* (v. caus.) to cause to eructate.
- کیکرماک *kikar-mak* (v. intr.) to eructate.
- کیکروک *kikar-uk* (vl. subs.) an eructation.
- کیگورماک *ki-gur-mak* } (v. caus.) to cause to put on (clothes).
- کیگوزماک *ki-guz-mak* }
- کیگیز *kigiz* (subs.). Same as *kighiz*.
- گیلام *gilam* (subs.) a carpet, P.
- کیلتورماک *kel-tur-mak* (v. caus.) to cause to come, to bring.
- کیلتورولماک *kel-tur-ul-mak* (v. caus. pass.) to be brought.

كىلىشتۇرماك *kel-ish-tur-mak* (v. recip. caus.) to cause to come to a good result, to bring to a satisfactory conclusion.

كىلىشماك *kel-ish-mak* (v. recip.) to come together; specially, to come to a good result.

كىلماك *kel-mak* (v. intr.) to come. [KAZ.]

كىلى *keli* (subs.) a large mortar (in which rice, &c. is pounded),

كىلىچاك *keli-chak* (subs.) a small hand-mortar (see *kéli*), KAZ.

كىلىن *kelin* (subs.) a daughter-in-law.

كىلىنچاك *kelin-chak* (subs.) a daughter-in-law (thus called while still a bride), KAZ.

كىم *kim* (conj.) that; also, (pron.) who. See كىم.

كىماك *kí-mak* (v. tr.) to put on (clothes), to wear.

كىمرسه *kim-ersa* (pron.) lit. who-ever, whoso-ever ("it may be"), but usually some one [same as *kishi*] (no longer common).

كىمرماك *kimar-mak* (v. tr.) to gnaw, KAZ.

كىمسان *kimsán* (subs.) a gold-tinted leather.

كىمۇك *kimuk* (subs.) cancellated bony tissue.

كىمه *kímah* (subs.) a vessel, a ship, a boat.

كىن *kíin* (subs.) the rear, the back part; also, (adv.) afterwards, behind; also, (post-pos.) after, behind [governs *din*]; *kíin-ga* "backwards," *kíin-i-ga* "towards" or "to the back of it" (definite).

كىندۈك *kindük* (subs.) the navel.

كىنگ *kíng* (adj.) wide, broad, extended; also, roomy, capacious.

كىنگاش *kingash* (subs.) counsel, advice, deliberation.

كىنگاشماك *kingash-mak* (v. intr.) to deliberate, to take counsel [? recip. of *kingäi-mak*; quasi "to open (one's mind) to one another"].

كىنگالماك *king-a'l-mak* (v. pass.) to be made wide or open.

كىنگايتماك *king-äi't-mak* (v. caus.) to cause to become open or wide.

كىنگايماك *king-äi-mak* (v. intr.) to become wide or open, to expand.

كىنگچىلىك *king-chi-lik* } (subs.) wideness, expansion.

كىنگىلىك *king-lik*

- کینه *kinah* (subs.) jealousy, P.
 کینه تو تماق *kinah tut-maq* (comp. v. intr.) to be jealous, P. T.
 کینه لاشماک *kinah-la-'sh-mak* (v. recip.) to be jealous of one another,
 P. T.
 کینه لاماک *kinah-la-mak* (v. intr.) to be jealous.
 کینه چه *kiin-i-chah* (adv.) backwards: *kiin-i-chah ket-mak* "to re-
 tire," "to back (of a horse);" *kiin-i-chah tur-mak* "to
 turn the back on."

ل

- لا *là* (part.) a particle expressive of multitude: e. g. *là-w-
 lashkar* "the whole army", "the army and all."
 لبا *lábá* (subs.) the marks of the (Qàlmàq) Buddhist religion
 [Lama].
 لبر *lábár* (subs.) title of an officer commanding a corps of in-
 fantry (500 men).
 لپولاماک *lapul-la-mak* (v. intr.) to flap to and fro (with the wind).
 لات *latta* (subs.) a rag. Also a kind of flowered silk stuff.
 لچه *láchah* (subs.) sealing-wax.
 لچاک *lachak* (subs.) a handkerchief thrown by women over the
 backs of their heads to cover their hair, when praying
 or going into any public place. Also, a kind of turban
 or tiara worn by Kirghiz women.
 لچیق *lachiq* (subs.) a temporary shed in a melon garden, &c., to
 shelter the person who looks after it, "a lodge in a
 garden of cucumbers."
 لچین *láchín* (subs.) a kind of hawk.
 لار *lar*. The plural affix.
 لاس *lās* (subs.) refuse silk.
 لاش *lash* (subs.) green slime (formed on stagnant water, &c.).
 لاف *laf* (subs.) false boasting, a drawing of the long bow, P.
 لاق *laq*. An affix forming nouns of locality. E. g. *yai-láq*
 "summer quarters" (pastures in the mountains, 'Alps'
 in the Swiss sense); *qish-laq* "winter quarters" (this

name formerly applied by the nomad inhabitants of Central Asia to the places where they spent the winter, has now become applied to all settled habitations or villages); *Su-laq* "a watering-place (of cattle);" *Ot-laq* "a grassy place," &c.

لاک *lāk* (subs.) sealing-wax, P.

لان *lan*. An affix forming numeral substantives. *E. g.* "*ochao-lan* "a group of three." See Grammar, p. 308.

لانگار *langar* (subs.) an anchor (or rather a heavy object used instead of an anchor), P. Also, a halting-place, a rest-house, Y.

لانگه *lankah* (subs.) linen (? Nankeen).

لادر *ldwar*. See *ldbar*.

لای *lāi* (subs.) mud, clay, P.

لایچی *lāi-chi* (subs.) a worker in clay, one who makes walls, &c. of mud, P. T.

لایتاماق *lāi-la'-t-maq* (v. caus.) to cause to become muddy, to muddy (tr.), P. T.

لایلاماق *lāi-la-maq* (v. intr.) to become muddy. Also, to float, P. T.

لایلیق *lāi-lik* (adj.) muddy. Also the name of the second stage from Yarkand on the Aksu road, P. T.

لب *lab* (subs.) a lip, an edge, P.

لچک *lachak*. See لچک.

لک *lak* (num.) a hundred thousand, P.

لکلک *laklak* (subs.) a stork, A.

لوخ *lukh* (subs.) a rush (grass).

لوق *luq*. See *lik*.

لوک *luk*. The same as *lāk*.

لوملوم *lum-lum* (subs.) a composition resembling india-rubber.

لونج *lunj* (subs.) the inside of the cheek, P.

لونگقا *lungqa* (subs.) a flower-pot.

لونگی *lungi* (subs.) a scarf used as turban or waist-scarf chiefly used by the Afghāns, P.

ليق *liq*
 ليك *lik*

{ An affix used in forming adjectives from substantives, and also abstract nouns from other nouns or from adjectives. It takes various forms according to the letters of the word to which it is affixed. See Gram. Euph. Changes.

- ماتال *matál* (subs.) a proverb, a saying, KAZ.
- ماتانگ *matang* (subs.) a kind of sweetmeat, (? ЧН.).
- ماتاو *mátáo* (subs.) a number of animals picketted together to a single rope, a chain-gang of criminals similarly fastened, KAZ.
- ماجان *maján* for *marján* (subs.) coral, A.
- ماچ *máçh* (subs.) paste made of the fine dust collected from a flour mill.
- ماراق *máráq* (vl. subs.) a place of ambushade or of secret observation (of an enemy).
- ماراچي *máráq-çhi* (subs.) an ambush, men placed so as to observe the enemy without being themselves seen.
- مارال *máral* (subs.) the female of the 12-tined stag of Eastern Turkistán.
- مارالباشي *Máral-báshi* (prop. name.) a town founded by the Chinese near Lai-Masjid, at the junction of the roads from Yarkand and Kashghar to Aksu.
- مارالي *márdli* (subs.) leather prepared from the skins of the 'mâral.'
- ماراماق *mára-mák* (v. tr.) to watch from a concealed post of observation, to lie in ambush.
- مارداچ *mardach* (adv.) tailor-wise (used of a mode of sitting), KAZ.
- ماروزا *mároza* (subs.) a small carpet.
- مازار *mázár* (subs.) a tomb of a holy man (which is revered as a shrine and ornamented with flags and yak-tails fastened to long poles, also often with horns of wild ani-

mals). The cairns, which one meets with throughout the mountains separating India from Turkistân, on all noticeable spots such as Passes, &c. are, in the parts of these mountains inhabited by the Musalmans, honoured with the title of "Mâzâr" and considered to be the tombs of ancient worthies, A.

مازاق *mazâq* (subs.) a joke, (corr. A.).

ماش *mâsh* (subs.) a kind of pulse, P.

ماش *mâsha* (subs.) candle-snuffers; also, the fork in which the match of a match-lock gun is fixed.

ماشاق *mâshaq* (subs.) gleanings.

ماشوت *mâshüt* (subs.) raw silk.

ماقال *mâqâl*. See *matâl*.

ماقتناماق *mâqta-'t-maq* (v. caus.) to cause to praise.

ماقتناماق *mâqta-maq* (v. tr.) to praise.

ماقتناما *mâqta-'n-maq* (v. refl.) to praise one's self, to boast.

ماکو *mâku* (subs.) a shuttle (generally made of horn).

مالا *mâla* (subs.) a bush-harrow, a rake, an instrument for covering seed with earth after sowing.

مالدورماق *mâl-dur-mâq* (v. caus.) to cause to dip.

مالماق *mâl-mâq* (v. tr.) to dip, specially into a dyeing vat.

ماما *mâmâ* (subs.) a grandmother, an old woman.

ماسوق *mâmuq* (subs.) cotton, KAZ.

مانتو *mantu* (subs.) a small meat-dumpling baked in steam.

مانتوبز *mantu-paz* (subs.) a baker of 'Mantus.'

مانتوچی *mantu-chi* (subs.) a pimp, KASHGHAR.

مانگدورماق *mang-dur-mâq* (v. caus.) to cause to walk.

مانگراشماق *mangra-'sh-mâq* (v. recip.) to bleat to one-another (of sheep or goats).

مانگراماق *mangra-mâq*, (v. intr.) to bleat, to baa (used of sheep and goats).

مانگقا *mangqa* (subs.) a running from the nose; also, a dangerous illness in horses.

- مانگلاي *mangldai* (subs.) the forehead.
 مانگماق *mang-maq* (v. intr.) to walk, to go, to progress in any manner (physically).
 مانگيش *mang-ish* (vl. subs.) movement, pace.
 ماي *māi* (subs.) fat, grease, butter, KAZ.
 مايا *māya* (subs.) capital, original sum invested, P.
 ماياق *mayaq* (subs.) sheep's droppings.
 مايدا *māida* (subs.) fine powder, P.
 مايداالاماك *māida-la-maq* (tr.) to reduce to powder.
 مايروق *māirūq* (adj.) twisted, crippled, KAZ.
 مايمون *māimūn* (subs.) a monkey, A.
 مدراماك *midra-mak* (v. intr.) to move.
 مرجان *marjān* (subs.) coral, A.
 مسكه *maskah* (subs.) fresh butter, P.
 مشرب *mashrab* (subs.) a social re-union with music, &c.
 مشق *mashq* (subs.) practice drill, military exercises, A.
 معقول *ma'qul* (adj.) lit. reasonable; commonly used for well, all right, A.
 معقولالاشماق *ma'qul-la-'sh-maq* (v. recip.) to come to an agreement together.
 معقولالاماق *ma'qul-la-maq* (v. intr.) to come to an agreement, to agree to.
 ملتيق *milteq* (subs.) a gun, a musket.
 ملتيقچي *milteq-chi* (subs.) a gunner, a musketeer.
 من *man* (pron.) I.
 منم *men-em* (pron.) my, KAZ, [for *maning*].
 منمنليك *man-man-lik* (subs.) egotism, self-conceit.
 منه *manah* (interj.) here! "voici!"
 مو *mu* interrogative affix. See Grammar.
 مو *mu* for *bu* in oblique cases.
 مورچه *muchah* (subs.) the hind-quarters of a sheep, KAZ.
 موچل *muchāl* (subs.) the cycle of 12 years (each of which is named after an animal). See Grammar.
 موجوتماق *muju-'t-maq* (v. caus.) to cause to pulverize in the hands.

موج و ماق *muju-maq* (v. tr.) to rub between the fingers, to rub to powder in the hands; to bring down the pride (of any one); also, to scrape the meat off a bone [in this last sense used only by the Kazzaks].

موچین *mūchin* (subs.) tweezers (with which the Turks of Yarkand and Kāshghar used to pull out the hair of their faces out of compliment to their beardless masters the Chinese) P.

موری *mori* (subs.) a gutter; also, a chimney, ? P.

موز *muz* (subs.) ice.

موزات *muzāt* properly *muz-art* (from *muz* "ice" and *art* old Turki for a "Pass") prop. name of a Pass on the road from Aksu to Ila.

موزای *muzai* (subs.) a calf.

موزتاغ *muz-tāgh* (subs.) a glacier; also, a snowy mountain. (See Remarks regarding the application of such words as proper names, under *Aq-tāgh*.)

موزلوق *muz-luq* (adj.) icy, covered with ice.

موشاک *mushak* (subs.) a fire-work, a rocket, a squib.

موشوک *mūshūk* (subs.) a cat.

موشلاماک *mush-la-mak* [for *musht-la-mak*] (v. tr.) to strike with the fist, P. T.

موغال *Mughal* } (prop. name) Mongol.
موغول *Mughul* }

مول *mol* (adj.) plentiful, abundant, Кн.

مولا *mola* (subs.) a pack-saddle.

مولا *mulla* (subs.) an educated person, one who has learnt to read and write, P.

مولتان *Multān* (prop. name). A name applied in Yarkand to all Shias, since a party of Multāni Shias made themselves notorious by their misconduct some years ago in that town.

مولن *molān* (subs.) a wild-cat.

موم *mum* (subs.) wax; *dk-mum* "bee's wax"; *kara-mum* "cobler's wax," P.

مونچاق *munjaq* (subs.) a coloured bead.

مونچه *mun-chah* (adv.) thus much, (from *bu* which see, and *chah*).

مونداغ *mun-dagh* (adv.) thus.

مونده *mun-dah* (adv.) here.

مونگ *mung* (subs.) sorrow, care.

مونگایمان *mung-ai-mâq* (v. intr.) to become sorrowful.

مونگداشماق *mung-da-'sh-maq* } (v. recip.) to impart one's griefs to one-

مونگلاشماق *mung-la-'sh-maq* } another.

مونگوز *munguz* (subs.) a horn.

مهربانچیلیق *mihrbân-chi-liq* (subs.) kindness, graciousness, P. T.

مهمانچیلیق *mihmân-chi-liq* (subs.) hospitality, P. T.

میجیز *mijâz* for *mizâj* (subs.) health; also, disposition, temper, P.

میخ *mekh* (subs.) a nail, a peg, P.

میخلاتماق *mekh-la-'t-maq* (v. caus.) to cause to nail, P. T.

میخلاماق *mekh-la-maq* (v. tr.) to nail, P. T.

میدیراتماق *midira-'t-mak* (v. caus.) to cause to move, to move (tr.)

میدیراماق *midira-mak* (v. intr.) to move, to creep.

میدیرلاماق *midir-la-mak* (v. intr.) to move about, to creep about.

میرده *mâirdah* (adv.) here [for *bu* or *ma-ger-dah* 'in this place'].

میس *mis* (subs.) copper, P.

میسقاجه *mis-qachah* (subs.) a copper vessel, P. T.

میشیق *mishiq* (subs.) a cat.

میکان *m'ikan* } interrogative or dubitative form of the Indef.

میकिन *m'ikin* } Part. of the defective verb *irmak* or *imak* is? whether? [See Grammar.]

میلتیق *milteq* (subs.) a gun.

میل *maıl* (subs.) inclination, choice, A.

مین *min* (pr.) I, KAZ, KIRGH.

میدجاق *minjaq*. See *munjâq*.

میندورماق *min-dur-mak* (v. caus.) to cause to ride, to mount (any one).

مینشماک *min-ish-mak* (v. recip.) to ride together.

مینگ *ming* (num.) a thousand.

مینگ *ming* (subs.) a beauty-spot, a mole on the face. [horse.

مینگاشماق *min-ga-'sh-mak* (v. recip.) to ride two together on one

مینگه *mingah* (subs.) the brain.

مینماک *min-mak* (v. tr.) to mount a horse, to ride, "*monter à*

مینه *mina* (interj.) here! "*voici!*" [*cheval.*"]

مییه *miyah* (subs.) the brain.

ن

نابات *nābāt* (subs.) sugar, P.

ناچار *nāchār* (adj.) helpless, P.

ناچارلیق *nāchār-liq* (subs.) helplessness, P. T.

نار *nār* (subs.) a single-humped camel, like those of India.

ناراق *nar-rāq*. For *nari-rāq*.

ناری *nari* (adv. and post-pos.) beyond, on the further side.

[This is perhaps merely a contraction of *an-yeri* ('*nyeri* that place). At any rate, it may be used precisely as if it were a compound of pronoun and substantive; e. g. *saning nari-'ng gha* "to thy further side" (where it takes both the possessive termination and dative post-position); *wi-din nari* or *nari da* "on the further side from (of) the house." See Grammar. But it has also the properties of a simple adverb, in that it can take the comparative form, see next word.]

ناریراق *nari-rāq* (adv. comparative) further, beyond, more on the other side.

ناز *nāz* (subs.) blandishments, endearments, P.

نازلاتماق *nāz-la-'t-maq* (v. caus.) to cause to endear himself, P. T.

نازلانماق *nāz-la-'n-maq* (v. refl.) to endear one's self, P. T.

نازلیق *nāz-liq* (adj.) endearing, using blandishments.

نازوک *nāzūk* (adj.) delicate, tender, P.

ناس *nās* (subs.) snuff (generally put into the mouth under the tongue and retained there for some time), P.

ناسوار *nāswardr.* The same, P.

ناسوال *nāsowl.* The same.

ناسوای *nāsawai.* The same, KAZ.

ناشبانی *nāshbati* } (subs.) a pear, P.
ناشوای *nāshwati* }

ناشته *nāshatak* (subs.) an early breakfast, a morsel eaten on first getting up, 'choti haziri,' P.

ناغارا *naghāra* (subs.) a large kettle-drum, P.

ناغاراچی *naghāra-chi* (subs.) a kettle-drummer, P. T.

نالک *nāl* (subs.) a pear.

ناموس *namus* (subs.) an indignity, a disgrace, A.

نار *ndo* } (subs.) the wooden spout or channel which carries

نارا *nāwa* } the water to the wheel of a water-mill, P.

نارات *nāwāt.* See *nābāt.*

نای *nai* (subs.) a reed, a fife, P.

نایچی *nai-chi* (subs.) a fifer, P. T.

نچند *ni-chand* (pron.) several, P. T.

نچوک *ni-chuk* (adv.) how? in what manner? thus, so.

نچه *ni-chah* (pron.) how many? how much?

نسخه *nuskhah* (subs.) model; also, pattern, design, drawing, A.

نغارا *naghara.* See *ناغارا*.

نغمه *naghmah* (subs.) music, melody, P.

نغمهچی *naghmah-chi* (subs.) a musician, P. T.

نمرسه *nimarsah* [*ni-'m-ersa*] (pron.) some thing [lit. "what-ever (it) may be." It preserves the memory of its origin sufficiently to avoid taking affixes or post-positions as a rule, excepting sometimes that of the accusative].

نمه *ni-mah* (pron.) what? also, something. [See Grammar, Pronouns.]

نگ *ning* or *nang* or *nung.* The affix of the Genitive case; in early Turki "property," "possession."

ني *ni* (pron.) what? Also (post-pos.) the affix of the Accusative case.

ني *naï*. See ناي.

نيٲاك *ni-tak* (adv.). The same as *ni-chuk*. [Almost obsolete.]

نيچوك *ni-chuk*. See نچوك.

نيچغدا *ni-chāgh-da* } (adv.) at what time? when?
نيچغدا *ni-chāq-da* }

نيچاغليق *ni-chāgh-liq* (pron.) what, at a guess? about how much?
[See *chāgh*.]

نيچون *ni-'chun* [for *ni-uchun*] (adv.) why? for what reason?

نيچه *ni-chah*. See نچه.

نيچه *naï-chah* (subs.) a little reed, specially one placed in a shuttle and on which the thread is wound.

نيمشقه *nim'ish-qa* (adv.) to what purpose? wherefore?

نيمه *nimah*. See نمه.

نينگ *ning*. The affix of the Genitive case. See Grammar.

نيرسه *niersah* [*ni-ersa*]. The same as *nimarsah* [constructed with *ni* instead of *nima*].

و

و *u* an affix corresponding with our "isn't there," "doesn't it."

ه

هاردورماق *hâr-dur-mâq* (v. caus.) to cause to be tired, to tire, (tr.).

هاردوق *hârduq* (subs.) fatigue, tiredness.

هارماق *hâr-mâq* (v. intr.) to be tired, to feel fatigue.

هاريتماق *hâr-it-maq* (v. caus.) to cause to be tired.

هانگ *hang* (subs.) a cliff, a precipice, Y.

هانگغوت *hangghut* (subs.) the ruddy sheildrake, *Casarea rutila*.

هانگو *hangu* (subs.) name of a tree from whose hard wood cups are made, (?) a kind of poplar.

هانگي *hangi* (subs.) a jack-ass.

- هايداماك *haïda-mak* (v. tr.) to drive, to drive away.
 هرکچان *har-kachan* (adv.) whenever, whensoever (lit. 'every when').
 هرماک *hur-mak* (v. tr.) to blow away (with the mouth).
 هورکاک *hur'-kak* (adj.) shying (of a horse), easily frightened.
 هورماک *hur-mak* (v. intr.) to bark (of a dog).
 هوررکماک *hürük-mak* (v. intr.) to shy [for *hürük-kak* (?)].
 هوررکوتماک *hürük-üt-mak* (v. caus.) to cause to shy.
 هورکوز *hukuz* (subs.) a bullock, an ox.
 هول *höl* (adj.) wet, damp.
 هولچیلیک *höl-chi-lık* } (subs.) wetness, humidity.
 هوللوک *höl-lök* }
 هوللاماک *höl-la-mak* (v. tr.) to wet.
 هي هي *hai-hai* (interj.) alas! what a pity!

ي

- يبالاق *yābalāq* } (subs.) an owl.
 يبالاق *yāpalāq* }
 يبالاق *yapalāq* (adj.) flat.
 يپراق *yapraq* (subs.) a leaf (of a tree), KAZ.
 يپرماق *yāpirmāq*. The same, E. T.
 يپشتورمان *yap-ish-tur-maq* (v. recip. caus.) to cause to become affixed, to affix.
 يپشماک *yap-ish-maq* (v. recip.) to stick together, to become affixed to one-another to climb, to "swarm up," [recip. from following].
 يپماق *yap-maq* (v. tr.) to close, to cover.
 يبو *yābu* (subs.) a baggage horse or strong pony.
 يپورماق *yapurmaq*. See يپورمان.
 يپوشماق *yap-ush-maq*. See *yapishmaq*.
 يپوغ *yap-ugh* } (subs.) the covering of a horse, horse-clothing.
 يپوق *yap-ug* }
 يپونجي *yap-un-ji* (subs.) a covering (for the body) against rain or cold, a blanket.

ياپونماق *yap-un-maq* (v. refl.) to cover one's self, to throw one's clothes on without putting one's arms into the sleeves.

ياپالاق *yapah-laq*. See ياپالاق.

يات *yât* (adj.) strange, unknown.

ياتاق *yâtâq* (subs.) a man belonging to a nomad tribe who from poverty comes into the towns to earn a livelihood,
KAZ, KH.

ياتاق *yât-qâq* (adj.) sleepy, who sleeps much or often.

ياتقورماق *yât-qur-maq* } (v. caus.) to cause to lie down.

ياتقوزماق *yât-guz-maq* }

ياتلانماق *yât-la-'n-maq* (v. refl.) to feel one's self strange, to be shy.

ياتلاماق *yât-la-maq* (v. tr.) to treat as a stranger, to shun.

ياتماق *yât-maq* (v. intr.) to lie down, to lie.

ياترغلىق *yât-ugh-luq* (vl. adj.) lying down, leaning.

ياتوق *yât-uq* (vl. adj.) leaning, inclined.

ياد *yâd* (subs.) memory, recollection, P.

ياد داش *yâd-dâsh* for *yâd-dâsh* (subs.) a memorandum, a reminder.

يادلانماق *yâd-la-'t-mâq* (v. caus.) to cause to remember, to remind,
P. T.

يادلانماق *yâd-la-'sh-mâq* (v. recip.) to remember one another, to speak of one another, P. T.

يادلانماق *yâd-la-'n-maq* (v. pass. or refl.) to be reminded, to bethink one's self, to recollect, P. T.

يادلانماق *yâd-la-mâq* (v. tr.) to commit to memory, to learn by heart.

يار *yâr* (subs.) a friend, P.

يار *yâr* (subs.) a bow (for shooting).

يار *yâr* (subs.) a fissure, a split (in the earth), a bank, a cliff (of earth). [The derivation of the name "Yarkand" is said to be from *yâr* "a bank" and *kand* or *kant* "a village or inhabited place," as in *Besh-kant* "the five villages," Tashkand "the stone abode," &c. Yarkand is situated on the edge of a bank which forms the north-western boundary of a depressed fluviatile plain nearly

four miles wide, low and marshy, which was probably formed by the divaricating branches of the Yarkand River. That river, however, now flows in a bed, 7 or 8 miles further east, which resembles in its character the plain on the south-east side of Yarkand. The Zilchak Ustang which runs through the latter some $3\frac{1}{2}$ miles from the city, being derived from the main river some miles higher up, has the appearance of a natural stream and not of a canal, and is perhaps a relic left by the main stream in its former bed. The edge of the higher level plain in the neighbourhood of the city is also cut by numerous fissures or depressions with high banks which add to the appropriateness of the name Yarkand "the city of banks." The name Yamân-yâr "evil banks," is also common in the country, being applied to a river passing south of Kashghar Fort, and also to a dry river-bed some 2 miles north of Yarkand.]

يارا *yara* (subs.) a wound.

ياراتماق *yâr-a-'t-maq* (v. caus.) to cause (or allow) to be pleasant (to one's self), to appreciate, to be pleased with [from *yara-naq*].

ياراتماق *yârât-maq* (v. tr.) to create, to make out of nothing.

ياراتيلماق *yârât-il-maq* (v. pass.) to be created.

ياراش *yâr-âsh* (subs.) peace, concord, P. T.

ياراشتورماق *yâr-â'sh-tur-maq* (v. recip. caus.) to cause to make peace, to reconcile.

ياراشماق *yâr-â'sh-mâq* (v. recip.) to make peace together, to become reconciled; also, to suit, to become, [lit. 'to be pleasant to one-another;'] from *yâr-a-maq*].

ياراق *yârâq* (subs.) a weapon, an arm.

ياراقلاماق *yârâq-la-maq* (v. tr.) to arm.

يارالغ *yara-ligh*
ياراليق *yara-liq* } (adj.) wounded.

- يارماق *yâr-a-mâq* (v. intr.) to be pleasant, to be agreeable, to please, P. T.
- ياردورماق *yâr-dur-mâq* (v. caus.) to cause to split, (tr.).
- يارغاق *yârgâq* (subs.) leather (of sheep or goat's skin).
- يارغو *yâr-ghu* (subs.) a fine, an exaction [quasi something split off by force from a man's property] (from *yâr-mâq*).
- يارغوچاق *yâr-ghu-chaq* (subs.) a hand-mill (only used for making tobacco into snuff, or splitting or breaking up grain for cattle, not for flour).
- يارقنات *yâr-qanât* (subs.) a bat.
- يارليغ *yarliġ* } (subs.) a (written) decree, an edict, a "farmân."
يارليق *yarliq* }
- يارليق *yâr-liq* (adj.) friendly.
- يارليق *yâr-liq* (adj.) fissured, with many banks.
- يارليقماق *yârlıq-maq* (v. tr.) to absolve (from sin), to proclaim an amnesty.
- يارما *yâr-ma* (subs.) split peas (or any other grain).
- يارماشماق *yarmash-maq*. Same as *yapish-mâq*.
- يارماق *yâr-mâq* (v. tr.) to split, to slit. [See *yâr* "a fissure."]
- يارماق *yarmâq* (subs.) a bronze coin of small value current in the time of the Chinese.
- ياروتماق *yâru-'t-maq* (v. caus.) to cause to be enlightened, to throw light (or any thing), to lighten, to illuminate.
- ياروشماق *yâr-üşh-mâq* (v. recip.) to split together.
- ياروشماق *yâru-'sh-mâq* (v. recip.) to lighten together.
- ياروغ *yâr-ugĥ* } (subs.) a split, a crack.
ياروق *yâr-uq* }
- ياروغ *yâru-'gh* } (subs.) a ray of light, light generally.
ياروق *yâru-'q* }
- ياريلماق *yâr-il-maq* (v. pass.) to be split.
- ياريم *yar-im* (subs.) half [from *yâr-maq* "to split"].
- ياز *yâz* (subs.) spring, also summer. [See *yâshil*.]
- يازدرماق *yâz-dur-maq* (v. caus.) to cause to write.

يازغورماق *yâz-ghur-maq* (v. caus.) to cause to err, to cause to be (legally) guilty, to bring in guilty, to convict.

يازلبوق *yâz-luq* (adj.) adapted to summer, summer (clothes, &c.).

يازماق *yâz-mâq* (v. tr.) to write, [? connected with *yarligh*].

يازماق *yâz-mâq* (v. intr.) to err, to deviate (from the road or from one's duty).

يازماق *yâz-maq* (v. tr.) to unfold, to spread out.

يازوق *yâz-uq* (vl. subs.) an error, a deviation from rectitude, a sin [from *yâz-mâq*].

يازى *yâzi* (subs.) the country (as opposed to the town) [? from *yâz* summer, quasi "summer quarters," or else from *yâz-mâq* to spread out, quasi "open country," "râse campagne" as opposed to the town].

يازىلماق *yâz-il-maq* (v. pass.) to be written.

يازىلماق *yâz-il-maq* (v. pass.) to be spread out.

يازىلىق *yâzi-liq* (subs.) a dweller in the country, a country-man.

ياساتماق *yasa-'t-maq* (v. caus.) to cause to make.

ياساق *yâsâq* (subs.) line of battle, formation of troops.

ياساتماق *yâsâ-mâq* (v. tr.) to make, to construct, to form, to form up (troops); also, to ornament, to adorn.

ياسانماق *yâsâ-'n-maq* (v. refl.) to form up in line (of an army); to adorn one's self.

ياسار *yâsâo* (subs.) a line of battle, Kâz.

ياسارل *yâsâwal* (subs.) a chamberlain, an usher; lit. a former up or arranger of men.

ياستانچاق *yâstâ-'n-châq* (subs.) an elbow-cushion, a support for the elbows.

ياستانماق *yâstâ-'n-mâq* (v. refl.) to support one's self on one's elbows, to sit in a half reclining position.

ياستوق *yâstuq* (subs.) a pillow (for the head), Kâz.

ياسقاق *yâsqâq* (subs.) a slate [not used for roofing because there is no rain].

ياسموق *yâsmuq* (subs.) a kind of pulse.

ياسسى *yási* (adj.) wide (in superficial measurement), Kaz.

ياش *yásh* (subs.) age (counted in years), years of age [*e. g.*, *man qırq yásh-da dur-man* "I am forty years old;" "*besk yásh-gha yelti* "he reached five years of age"]].

ياش *yásh* (adj.) of tender age, young [*e. g.*, *yásh bala* "an infant," *yásh yigit* "a young man"]].

ياش *yásh* (subs.) a tear.

ياشار *yásh-ar* (adj.) aged (so-and-so) [*e. g.*, *ellik yáshar adam* "a man fifty years of age"]].

ياشارتماق *yásh-ar-'t-máq* (v. caus.) to cause to weep.

ياشارتماك *yásh-ar-'t-mák* (v. caus.) to cause to become green.

ياشارماق *yásh-ar-máq* (v. intr.) to weep, to shed tears.

ياشارماك *yásh-ar-mák* (v. intr.) to sprout, to become green.

ياشاماц *yásh-a-máq* (v. intr.) to age, to grow older [applies equally at all ages].

ياشانماц *yásh-an-máq* (v. refl.) to age one's self, to grow older.

ياشلوق *yásh-luq* (subs.) youth, early age.

ياшурмац *yásh-ur-maq* (v. caus.) to cause to be hidden, to hide, to conceal.

ياшурон *yásh-ur-un* (adj.) hidden, concealed.

ياшуррнмац *yásh-ur-un-máq* (v. refl.) to hide one's self, to conceal itself.

ياشونмац *yásh-un-máq* (v. refl.) to hide one's self.

ياشيق *yáshiq* (adj.) lean, without fat (said only of meat).

ياшил *yáshil* (adj.) green. [Possibly this is a passive form derived

from a root having the meaning of 'becoming green' as connected with the growth of plants, and which would be the common origin of *yásh* 'early age', 'budding youth,' and of *yásh-ar-mák* "to become green," (whose form shows that the syllable *il* in *yáshil* is not of the essence of the root), *ar* being the verbal co-efficient of colour, as *kok-ar-mák* "to become blue," *sarigh-ar-maq* "to become yellow," *özga-'r-mák* "to become of different colour." See also *qiz-ar-mák* and *qizil*. This hypo-

thetical common root of *yāsh* and *yāsh-il* is perhaps connected with that of *yāz* "spring" (the season of growth). Compare also *yāz-māq* "to open out." Prof. Vambéry (from the *kudatku Bilik*) gives the following comparison of the ages of man with the seasons of the year.

yāz = Spring, answers to childhood (which we have seen is called *yāsh*).

yāi = Summer, answers to youth.

kōs (*kuz*) = Autumn (the reaping season), answers to full-grown manhood.

qish = Winter, answers to old age.

Thus it appears (as might indeed be imagined) that the idea of comparing man's childhood with the season of the first growth of plants has long been familiar to the Turks, and they may have expressed this in the formation of their words for the same.]

ياشين *yāshin* (subs.) lightning.

ياغ *yāgh* (subs.) grease, fat. [Distinguished into *su-yāghi* "oil," *tatliq yāgh* "sweet oil," *quyuruq yāghi* lit. "tail fat" (the fat of the tail of the Dumba sheep), *sarigh yāgh* "yellow grease," viz., "ghee or clarified butter," *maskah yāgh* "butter."]

ياغاچ *yaghāch* (subs.) wood, a stick.

ياغدورماق *yagh-dur-maq* (v. caus.) to cause to rain, to water (from above), "arroses."

ياغررون *yaghrün* (subs.) a shoulder-blade, KAZ. KIRGH.

ياغررونچی *yaghrün-chi* (subs.) one who divines by means of the shoulder-blades of sheep, KAZ. KIRGH.

ياغلاغو *yāgh-la-ghu* (subs.) a frying-pan, [from *yāgh* 'grease'].

ياغلانماق *yāgh-la-'n-māq* (v. pass. and refl.) to be made or become greasy, to make itself greasy, to become greasy of itself.

ياغلاماق *yāgh-la-māq* (v. tr.) to make greasy, to grease.

ياغلیق *yāgh-liq* (subs.) a napkin (for wiping the grease from one's hands); also, (adj.) greasy.

ياغي *yāghi* (adj.) rebellious; also, warring, at war, P.

- ياغير *yāghir* (adj.) galled (by the saddle, &c., said of a horse).
 ياغىلىق *yāghī-liq* (subs.) rebellion; also, hostility, P. T.
 ياغىن *yaghin* (subs.) rain.
 ياق *yāk* (subs.) the jaw-bone.
 ياقا *yāqā* (subs.) a border, an edge, a collar (of a garment),
 [the other edges of a garment have a different name].
 ياقالاماق *yāqā-la-maq* (v. tr.) to border, to edge; to move along the
 edge (of anything); to make a collar (to a garment);
 to seize by the collar, to collar.
 ياقدررماق *yāq-tur-maq* (v. caus.) to cause to light (fire).
 ياقدررماق *yāq-tur-maq* (v. caus.) to cause (or allow) to be pleasant
 (to one's self), to approve, to be pleased with.
 ياقتي *yāqti* (subs.) light, KAZ.
 ياقماق *yāq-māq* (v. tr.) to light, to set on fire.
 ياقماق *yāq-māq* (v. intr.) to be agreeable, to please [governs *gha*].
 ياقىن *yāq-in* (adv.) near, close to [? at the edge (*yāqā*)].
 ياقىلماق *yāq-il-maq* (v. pass.) to be lighted.
 ياقىنلاماق *yāqin-la-maq* (v. intr.) to become near, to approach [go-
 verns *gha*].
 يال *yāl* (subs.) a mane (of a horse).
 يال *yāl* (subs.) wages, pay, recompense for service.
 يالاق *yālāq* (subs.) a plate for feeding dogs out of, [from their
 licking up the remainders].
 يالاماق *yāla-māk* (v. tr.) to lick.
 يالانچاق *yālānghāch* (adj.) naked, bare [? from *yāla-maq*].
 يالانچاقلاماق *yālānghāch-la-maq* (v. tr.) to make naked, to strip.
 يالانچاق *yālang* (adj.) half-clothed (said of a man insufficiently
 clothed in cold weather), bare, naked (said of a plain or
 mountain).
 يالانچاقلاماق *yālang-la-māq* (v. tr.) to make bare; also, to brandish
 يالانچاقلىق *yālang-liq* (subs.) a bare place, an open plain. [(a sword).
 يالار *yālar* (subs.). See *yālāq*, KAZ.
 يالبارماق *yālbār-māq* (v. intr.) to beseech, to entreat, to act as a
 'lick spittle' [? from *yāla maq*].

- يَاطِق *yālpāq* (adj.) wide (in superficial measurement), flat.
- يَاطِقُ التُّورَاق *yāl-tur-a't-māq* (v. caus.) to cause to glisten (whether by rubbing up to make bright, or by displaying the bright object in the light).
- يَاطِقُ التُّورَاق *yāl-tur-a-māq* (v. intr.) to glisten, to shine.
- يَاطِقُ النِّمَاق *yāl-chi-'t-māq* (v. caus.) to cause to be pleased with one's service, to render acceptable service.
- يَاطِقُ النِّمَاق *yāl-chi-māq* (v. intr.) to be pleased with (any one's) services, to approve. [Governs 'din'.]
- يَاطِقُ الدِّيرَاق *yāl-dir-a-māq*. See *yalturamāq*.
- يَاطِقُ الغَاق *yālgħa-māq* (v. tr.) to join, to unite.
- يَاطِقُ الغَاق *yālgħān* (subs.) a lie, an untruth.
- يَاطِقُ النِّمَاق *yālgħān-chi* (subs.) a liar.
- يَاطِقُ الغُوز *yālgħoz* (adj.) alone.
- يَاطِقُ الغُوزِيق *yālgħoz-liq* (subs.) loneliness, the being alone.
- يَاطِقُ الغُوزِاق *yālgħoz-la-māq* (v. tr.) to isolate, to cause to be alone.
- يَاطِقُ الغُوزِاق *yālgħoz-luq* (subs.) solitude, loneliness, isolation.
- يَاطِقُ النِّمَاق *yālin* (subs.) a flame.
- يَاطِقُ الدُّورَاق *yālin-dur-māq* (v. caus.) to cause to entreat (by withholding what is asked for), '*se faire prier*.'
- يَاطِقُ النِّمَاق *yālin-māq* (v. intr.) to beseech, to abase one's self in entreaties (governs *gha* of the person entreated, and *schin* of the petition) [? the refl. form of *yāla-māq*; see also *yābarmāq*.]
- يَاطِقُ المَاق *yā'māq* (vl. subs.) a patch (sewn into a garment).
- يَاطِقُ المَاق *yāma-māq* (v. tr.) to patch, to sew a patch over a rent in a garment.
- يَاطِقُ المَاق *yamān* (adj.) bad, evil; also, bad to beat, brave, adroit.
- يَاطِقُ المَاقِاق *yamān-la-māq* (v. intr.) to become bad, to take in bad part, to take it ill, to be offended; also, to die of a certain disease (of horses in which the breast swells).
- يَاطِقُ المَاقِاق *yamān-liq* (subs.) evil, badness.
- يَاطِقُ المَاقِاق *yāmghur* (subs.) rain.

يان *yân* (subs.) a flank, a side. [Forms several adverbs, see Grammar.]

يانا *yâna* (adv.). See *yanañ*.

يانباش *yân-bâsh* (subs.) the hip-bone [lit. 'side-head'].

يانباشلاماق *yân-bâsh-la-mâq* (v. intr.) to lie on one's side, to recline on one's hip.

يانتاق *yântâq* (subs.) a thorny plant growing in desert places and eaten by camels.

يانجيتماق *yânjî't-mâq* (v. caus.) to cause to pound up.

يانجيماق *yânji-mâq* (v. tr.) to pound up, to reduce to powder; also, (metaph.) to bring to nothing, to ruin.

يانچيق *yân-chîq* (subs.) a side-pocket.

يانداش *yân-dâsh* (subs.) a companion, lit. "a side-fellow" [conf. *qursâq-dâsh*]. [by side.

يانداشماق *yân-dâsh-mâq* (v. intr.) to accompany, to be or go side

ياندورماق *yân-dur-mâq* (v. caus.) to cause to burn, to burn (tr.).

ياندورماق *yân-dur-mâq* (v. caus.) to cause to return, to return (tr.); also, to cause to do again.

يانگات *yangâq* (subs.) a walnut.

يانگاق *yângâq* (subs.) the jaw-bone.

يانگراماق *yangra-mâq* (v. intr.) to echo back, to give an echo.

يانگھاق *yangghâq* (subs.) a walnut.

يانگىلماق *yangil-mâq* (v. tr.) to make a mistake.

يانگزه *yangzah* (subs.) sort, kind, pattern, CHIN.

يانگليغ *yang-ligh* (adj.) equal, same [generally used with *bir* before it, = one and the same] (obsolete).

يانگليش *yangl-ish* (vl. subs.) a mistake [from *yangilmaq*].

يانماق *yân-mâq* (v. intr.) to burn, to consume (itself) by fire.

يانماق *yân-mâq* (v. intr.) to return, to turn back; also, to change one's mind, to give up [governs *din*]; also, its past participle in composition with another verb indicates repetition of the action of the latter, e. g., *yân-ip qel-dim* "I did it over again."

يانىماق *yāni-māq* (v. tr.) to whet, to sharpen, 'repasser.'

يار *yāo* (subs. and adj.) an enemy; also, hostile, КАЗ.

يارا *yāwa* (adj.) wild, not tamed.

ياواش *yawash* (adj.) tame, docile, tractable.

يارچى *yāu-chi* (subs.) a go-between, or arranger of a marriage [the custom is for this person to wear one leg of his trousers loose over his riding boot while the other leg is tucked into the boot as usual; this is the mark of the business that he has come upon] (? from *yāu-maq*).

يارشماق *yāu-'sh-maq* (v. recip.) to approach one another, to approach together [from *yāu-maq*].

ياردق *yāu-'q* (adv.) near.

يارقلاماق *yāu-'q-la-māq* (v. intr.) to approach.

يارماق *yāu-maq* (v. intr.) to approach.

يائي *yāi* (subs.) summer, [rare at the present day except in camp].

ياياتى *yāyāq* (subs.) a footman; also, (adv.) on foot, КН.

يايار *yayāo*. The same, КАЗ.

ياйلاق *yāi-lāq* (subs.) a summer pasture, an 'alp' (in the Swiss sense).

ياйلاماق *yāi-la-maq* (v. intr.) to pass the summer (used of flocks and herds taken to their summer-pastures).

يايمات *yāi-māq* (v. tr.) to spread out, to extend. Same as *yāz-maq*.

يايورلاماق *yāy-ul-māq* (v. pass.) to be spread out, to flood.

يетилан *yetti-'āilan* (num. subs.) a group of seven.

yetmiş *yet-mish* (num.) seventy.

yetmişinci *yet-mish-anchi* (n. adj.) seventieth.

yetmişinci *yet-'anchi* (num. adj.) seventh.

yeti *yetti* (num.) seven [*yetti-yulduz* or *yetti-ughri* ('the seven stars' or 'the seven thieves'), the name of the Great Bear among the Kazzaks, who say that this constellation is a gang of robbers ever circling round to watch their opportunity of carrying off the two horses (two

bright stars of Ursa Minor) called *Aqbôz dt* and *Kök-bôz dt* ('white-grey horse' and 'blue grey horse') which are picketted to a peg (the Pole-Star) round which they graze].

يخ *yakh* (subs.) ice, P.

يختان *yakh-tan* (subs.) a pannier, a leather box forming one side of a baggage animal's load, [for P. *yak-dân*].

بخشي *yakhshi* (adj. and adv.) good; well.

يخک *yakhak* (subs.) glazed chintz [? from *yakh*, ice, P.].

يخلامک *yakh-la-mak* (v. intr.) to freeze; also, to set (of grease or any liquid or viscous fluid which hardens with decrease of temperature), P. T.

يخني *yakhni* (subs.) cold meat.

يد *yed* (subs.) a perfume, a pleasant smell. [smell.

يدلاتماک *yed-la-'t-mak* (v. caus.) to cause to perceive a pleasant

يدلاماک *yed-la-mak* (v. tr.) to smell, to perceive a pleasant odour.

يدلانماک *yed-la-'n-mak* (v. pass. and refl.) to be smelt, to smell (intr.) to give rise to a pleasant odour.

يدليک *yed-lik* (adj.) pleasant smelling, odoriferous.

يارا *yarâ* (subs.) a wound.

ياراغ *yarâgh* (subs.) a weapon, an arm, [see ياراق].

ياراقلماق *yarâgh-la-maq* (v. tr.) to arm. Same as ياراقلاماق.

ياراغليق *yarâ-'gh-liq* (vl. adj.) pleasing [from *yarâ-maq*].

ياراغليق *yarâgh-liq* (adj.) armed.

ياراق *yurâq* (adj.) distant; also, (adv.) far.

ياراقلاشماق *yurâq-la-'sh-maq* (v. recip.) to remove to a distance from one another, to separate (tr. or intr.).

ياراقلماق *yurâq-la-maq* (v. tr.) to remove to a distance.

ياراقلیق *yurâq-liq* (subs.) distance, far-ness.

ياراماق *yara-maq*. See ياراماق.

يغاچ *yaghâch* (subs.) wood.

يغاچچي *yaghâch-chi* (subs.) a carpenter.

يغلاماق *yighla-mâq* (v. intr.) to weep, to lament with tears.

يغهي *yighi* (subs.) weeping, lamentation.

يقا *yeqa*. See ياقا.

يقتماق *yek-it-mdq* (v. caus.) to cause to fall, to throw down.

يقلماق *yek-il-mdq* (v. pass.) to be caused to fall, to be thrown down, to fall.

يَقْمَاق *yek-mdq* (v. tr.) to throw down, KAZ.

يکه *yak-kah* (adj. and adv.) alone; only, P.

يگرماک *yigar-mak* (v. tr.) to spin. [Also يگرمات]

يگرمایان *yigarm-aïlan* (num. subs.) a group of twenty.

يگرمنجي *yigarm'-anchi* (num. adj.) twentieth.

يگرمه *yigarmah* (num.) twenty.

يیل *yil* (subs.) a year. [The solar year from *ndo-roz* to *ndo-roz* (early spring) is called after the animals of the Tartar year-cycle. The lunar year is of course called by its number after the era of the Hijra.]

يولان *yulân* (subs.) a serpent, a snake.

يالانگ *yalâng*. See يالانگ.

يالانگاچ *yalâng-ghâch*. See يالانگاچ.

يولقي *yulqi* (subs.) horse-kind (used of horses generally without distinction of sex or age, like the English word 'mankind' for the children of men generally), *bir top yulqi* "a (mixed) herd of horses."

يولقي چي *yulqi-ohi* (subs.) a keeper of a herd of horses.

يوليقي *yiliqi* (adj.) lukewarm, tepid.

ييليك *yilik* (subs.) marrow. Also ييليق.

ييلاماک *yem-la-mak* (v. tr.) to paste, to glue. Also ييليلاماک.

ينگا *yanga* (subs.) an elder brother's wife.

ينگلېغ *yang-ligh*. See يانگلېغ.

ينگي *yangi* (adj.) new.

ينه *yanah* (adj. and adv.) other; also, again.

يوا *yud* (subs.) a leek.

يواتماق *yud-'t-maq* (v. caus.) to cause (a child) to stop crying (by giving it something to amuse it), to hush.

- یواش *yud'sh* or *yawd-'sh* (adj.) mild, tractable, gentle.
 یواشلیق *yudsh-liq* (adj.) mildness, gentleness.
 یوالدوز *yudlduz* (subs.) a packing-needle.
 یواندورماق *yud-'n-dur-maq* (v. caus.) to cause (a child) to stop crying, to pacify, to soothe (a child).
 یوانماق *yud-'n-maq* (v. refl.) to pacify itself, to stop crying (of a child), to become hushed.
 یوپقا *yupqa* (adj.) thin (not used of men or animals).
 یوپقالماق *yupqa-la-maq* (v. tr.) to make thin.
 یوپوغ *yupugh.* }
 یوپوق *yupuq.* } See یاپوغ.
 یوت *yut* (subs.) a scarcity of grass on the pastures.
 یوتال *yütal* (adj.) coughing, having a cough.
 یوتالماک *yütal-mak* }
 یوتکورماک *yüt-kür-mak* } (v. intr.) to cough.
 یوتورماک *yüt-ür-mak* (v. caus.) to cause to be lost, to lose [for یوتورماک].
 یوتماق *yut-maq* (v. tr.) to swallow.
 یورا *yurá* (adv.) upright, standing, Kaz.
 یوراک *yurak* (subs.) heart (used without metaphor).
 یورت *yürt* (subs.) a country, one's home.
 یورتادل *yurt-aul* (subs.) a mounted troop of plunderers [from *yurt-maq*].
 یورتاک *yurt-ak* (vl. subs. and adj.) a trot; trotting.
 یورتقاق *yurt-qan* (subs.) a counterpane, a bed-covering stuffed with cotton.
 یورتماق *yurt-maq* (v. intr.) to trot.
 یوردورماک *yür-dür-mak* (v. caus.) to cause to proceed [from *yür-mak*].
 یورغا *yurgha* (subs.) an amble (pace of a horse).
 یورغالماق *yurgha-la-maq* (v. intr.) to amble.
 یورگاماک *yurga-mak* (v. tr.) to roll up, to wind, to fold.
 یورگانماک *yurga-'n-mak* (v. refl.) to roll one's self up.
 یورگوزماک *yür-güz-mak.* See *yür-dür-mak*.

يورما *yurma* (subs.) an ornamental stitch worked with a crochet by means of which loops of thread are brought through the stuff from behind, each loop being brought through the bight of the preceding one.

يورماق *yûru-mâq* (v. tr.) to interpret (a dream).

يورماق *yûr-mâq* (v. intr.) to walk, to progress, to proceed, [*dî-ga min-ip yûr-mak* "to proceed on horseback"].

يورتماق *yûrü-'t-mak* (v. caus.) to cause to walk, to cause to proceed.

يورماق *yûrü-mak*. See *yûr-mak*, also *mang-mâq*.

يورۇق *yûrûq*. See *yâruyh*, *yâruq* (in both senses).

يورۇك *yûrü-'k* (vl. subs.) pace, gait, manner of walking.

يوز *yüz* (subs.) the cheek, the face; also, face or surface (of any object); also metaph., *an-din ul yüz-i ghâ* that side of it (*viz.*, beyond it); *fulân kelgan-ning bu-yüz-i da* "since so-and-so came" (lit. "on this side of so-and-so's coming"). *Bu* (or *ul*)-*yüz-i da* (or *gha*) is thus a compound post-position taking *ning* or *din* after the noun. [See grammar.]

يوز *yüz* (num.) a hundred.

يوزلو *yüz-do* (num. subs.) a group of a hundred, *KAZ.*

يوزايلاق *yüz-âilan* (num. subs.) a group of a hundred, 'une centaine.'

يوزباشى *yüz-bâshi* (subs.) a chief of a hundred, a centurion.

يوزلاتماق *yüz-la-'t-mak* (v. caus.) to cause to put face to face, or confront; also, to cause to face round (tr.)

يوزلاشتورماق *yüz-la-'sh-tur-mak* (v. recip. caus.) to cause to face or confront one another.

يوزلاشماق *yüz-la-'sh-maq* (v. recip.) to face or confront one another.

يوزلاماق *yüz-la-mak* (v. tr.) to put in face of, to confront (tr.); also, to face round (a man or any object, &c.).

يوزلاماق *yüz-la-mak* (v. tr.) to bring up to the number of hundred.

يوزلانماك *yüz-la-'n-mak* (v. refl. and pass.) to face, to put one's self in face of ; also, to face (one's self) round, to turn one's face towards ; also, to be confronted, to be faced round.

يوسون *yusun* (subs.) institution, regulation, custom. [? from *yâsâ-mdq* for *yâsun*].

يوسونلوق *yusun-luq* (adj.) regular, customary.

يوشورماق *yushur-maq*. See *yâhsur-maq*.

يوشورون *yushur-un*. See *yâhsurun*.

يوشه *yoshah* (subs.) a kind of red earth used as a colouring matter.

يوغ *yogh* (subs.) a yoke, P.

يوغ *yogh* (subs.) the axle of a water-wheel, whose prolongation forms also the axle of the upper mill-stone (revolving through a hole in the centre of the lower mill-stone),
КН.

يوغان *yoghan* (adj.) thick, stout, fat ; also, large, big.

يوغانلاماق *yoghan-la-maq* (v. tr.) to make thick, to thicken.

يوغانلانماق *yoghan-la-'n-maq* (v. refl. and pass.) to become thick or stout ; to be made thick, &c.

يوغانلىق *yoghan-liq* (subs.) thickness, stoutness.

يوغوجي *yu-ghu-chi* (subs.) a washer, specially a washer of the dead.

يوغورماق *yughur-mdq* (v. tr.) to mix, to compound (any substance with a liquid).

يوق *yoq* (v. impers.) is not, there is not, not being, non-existent, non-existence, &c. ; also (interj.) no ! [never used with a verb, like our word 'not,' to give it a negative sense ; the seeming exceptions being resolvable into compound tenses in which *yoq* is used as the Participle of the verb of negation prefixed to an auxiliary verb : e. g., *yoq-dur-man*, *yoq-idim* (compare *qelghan-dur-man*, *qelghan-idim*) but never *yoq bir-dim* or *yoq bira-man* (not auxiliaries). Instead of these we always have the forms *bir-ma-dim*, *bir-maï-man* ("I gave not," "I give

not"). Again *yoq-qelmâq* means "to make non-existent," "to destroy", "to annihilate"! (it is not the negative of "to make," which would be *gel-mas*, but a compound verb). Here *yoq* is used as a verbal adjective (compare *chung qelmâq* "to make big"). *Yoq-bolmâq* = "to become non-existent", "to be destroyed or annihilated", ("not to become ..." would be *bol-mas*). Misc. Ex. *ish-im yoq-qa ketti* "my work came (went) to nothing;" *man yoq waqt-da* "at a time when I was not present", (lit. "I-not-being time in"); *man-da yoq* "I have not ..." (lit. 'there is not to me'). Finally wherever *bâr* is used, *yoq* can be substituted for it, if it be desired to make the statement negative.

يوقا *yuqa*. See *yupqa*, KAZ.

يوقاري *yogari* (adv. and post-pos.) up, above; also, above, over. [See Grammar].

يوقاريلاش *yogari-lash* (adj. and adv.) sloping upwards; upwards by a slope.

يوقاتماق *yoq-at-maq* (v. tr.) to make non-existent, to annihilate, to destroy; also, to lose, [for *yoq itmak*].

يوقالماق *yoq-al-maq* (v. intr. and passive) to become non-existent, to be destroyed or annihilated, to disappear; also, to be lost, [for *yoq-bolmâq*].

يوقتورماق *yuq-tur-maq* (v. caus.) to cause to be inflected, to inflect, (tr.), [with the particular illness as a nominative or subject, and *din* (from) and *gha* (to) of the persons].

يوقسو *yoq-so* (interj.) a respectful form of *yoq*.

يوقسوز *yuq-süz* (adj.) of no account, mean, miserly.

يوقسوز *yû-uq-süz* (adj.) unwashed, dirty [from *yû-mâq*].

يوقلاماق *yoq-la-maq* (v. tr.) to remember.

يوقماق *yuq-maq* (v. intr.) to stain, to leave a mark, to touch, to affect, to produce an effect, to profit; to infect, to attack (as does an illness) [governs *gha*].

يوك *yük* (subs.) baggage, a load, goods.

يوغان *yugan* (subs.) a bridle.

يوكلاماك *yük-la-mak* (v. tr.) to load, to lade (with accusative of the object and *gha* of the carrier).

يوكلوك *yük-lük* (vl. adj.) laden.

يوكورماق *yügür-maq* (v. intr.) to run.

يوكوندورماق *yükün-dür-mak* (v. caus.) to cause to sit in a kneeling position.

يوكونماق *yükün-mak* (v. intr.) to sit in a kneeling position [the universal ceremonious mode of sitting in Central Asia, first kneeling down and then sitting back on one's heels; the mode of sitting with the legs crossed in front of one (tailor-fashion) which is called *châr zânu* ('four knees'), is considered either familiar or disrespectful.]

يول *yol* (subs.) a road, a route, a way; also the E. Turkistani name for the Chinese unit of road-measurement, a "li" [defined to be the distance at which the horns on a cow's head or the distinction between a man and a woman's face become indistinguishable !].

يولماق *yola-mâq* (v. intr.) to approach, to go near, [see *yân-maq* and *yauq-la-maq*].

يولماق *yula-mak* (v. tr.) to prop, to support, to shore up.

يولانماق *yula-'n-mak* (v. refl.) to support one's self, to lean.

يولبارس *yulbars* (subs.) a tiger.

يولداش *yol-dash* (subs.) a companion on the road, a travelling companion.

يولدورماق *yul-dur-maq* (v. caus.) to cause to pull up by the roots.

يولدوز *yüldüz* (subs.) a star (including planets); *quyuruq yulduz* "a comet" (lit. 'a tail-star').

يولغون *yülghun* (subs.) tamarisk.

يوللاماق *yol-la-mâq* (v. tr.) to set (a man) on his way, to start (any one).

يولماق *yul-maq* (v. tr.) to uproot, to pull out by the roots.

يولون *yulun* (subs.) the spinal chord.

يولوقماق *yol-uq-mâq* (v. intr.) to meet by the way, to encounter,
[governs *gha*].

يومات *yû-mâq* (v. tr.) to wash.

يومات سبت *yumâq-sibit* (subs.) the fruit of the *Coriandrum Sativum*,
'Dhanian' Hind.

يومالاتماق *yumala-'t-maq* (v. caus.) to cause to roll about, to roll
about (tr.).

يومالاتماق *yumala-maq* (v. intr.) to roll about.

يومالا *yumala-'q* (vl. adj.) round, spherical.

يومالا قلاماق *yumalaq-la-maq* (v. tr.) to make round.

يومتق *yumurtkah* (subs.) an egg, Kaz.

يومتشاق *yumshâq* (adj.) soft.

يومتغاق *yumghâq* (subs.) a ball of thread, &c.

يومتاق *yum-maq* (v. tr.) to close (one's eyes, mouth or hand).

يومتوق *yum-uq* (vl. adj.) closed (of the eyes, mouth or hand).

يومتورماق *yumur-mâq* (v. caus.) to throw down, to overthrow (a wall
or building).

يومتوروق *yumur-uq* (vl. adj.) ruinous, in a ruinous condition.

يون *yun* (subs.) wool, Kaz. КН.

يوزگ *yung* (subs.) wool.

يوزگچقه *yungichqa* (subs.) lucerne (the grass), Kaz., КН.

يوزگول *yungul* (adj.) light (not heavy).

يوزماق *yun-mâq* (v. tr.) to cut (in a shaving manner, as a pen),
to whittle.

يوزنماق *yû-un-mâq* (v. refl.) to wash one's self.

يوزنچقه *yunuchqah* (subs.). See *yungichqa*.

يوزنچكه *yunuchkah* (adj.) fine, slender.

يوزنوماق *yunu-mâq*. See *yâni-mâq*.

يوزوق *yûuq*. See *yâuq*.

يوزوقلاماق *yûuq-la-mâq*. See *yâuq-la-maq*.

ييب *yip* (subs.) thread. See *jib*.

يپليك *yip-lik* (subs.) a fine thread attached by leather-workers to the thicker thread with which their stitches are made, which fine thread is pushed through by means of a needle drawing the stouter thread with it.

يپاك *yipak* (subs.) silk.

ييتيك *yittik* (adj.) sharp, acute.

ييتماك *yet-mak* (v. intr.) to arrive, to reach, to attain.

ييتميش *yet-mish* (num.) seventy. See يتمش.

ييتي *yetti* (num.) seven. See يتي.

يئر *yèr* (subs.) ground, land, the earth ; also, place, locality.

ييراك *yeraq* (adj. and adv.) distant, far.

ييرلاماك *yer-la-mak* (v. tr.) to put into the earth, to bury.

ييشماك *yesh-mak* (v. tr.) to untie, to undo a knot.

ييشنماك *yesh-in-mak* (v. refl.) to untie one's self, to undress one's self.

يىغماق *yigh-maq* (v. tr.) to collect, to bring together, to accumulate.

يىغين *yigh-in* (subs.) an assemblage.

يىغينماق *yigh-in-maq* (v. refl.) to collect themselves, to assemble ; also, to collect one's self, to tuck in one's skirts (in sitting down).

يىكان *yékan* (subs.) a water-rush.

يىگيت *yigit* (subs.) a young man ; also, a soldier (cavalry).

يىگرماك *yigar-mak*. See يىگرمات.

يىگرمه *yigarmah*. See يىگرمه.

يىل *yil*. See يل.

يىل *yil* (subs.) wind, KAZ.

يىلان *yildan*. See يلان.

يىلپوگچ *yel-pu-gu'ch* (subs.) a fan.

يىلپىماك *yel-pi-mak* (v. tr.) to fan.

يىلدام *yil-dam* (adv.) quickly, fast.

يىلديز *yildiz* (subs.) a root-filament.

يىليم *yelim* (subs.) glue.

يىليلاماك *yelim-la-mak* (v. tr.) to glue.

يىم *yem* (subs.) corn, cattle-feed.

يېماک *yé-mak* (v. tr.) to eat.

يېملاماک *yem-la-mak*. See يېلېلاماک.

يېمیش *yé-mish* (subs.) fruit.

يېنگ *ying* (subs.) a sleeve.

يېنگىل *yengil* } (adj.) light (not heavy).
يېنىک *yenek* }



APPENDIX

TO

V O C A B U L A R Y.

TURKI NAMES OF BIRDS.

By J. SCULLY, Esq.

Late Medical Officer, Kàshghar Agency.

اچچە قوبروق سا | Achchah qoyruq sá. The Common Kite of Eastern Turkistán, *Milvus melanotis*.

اق اوقار | Aq áuqár. The White Heron, *Herodias alba*.

اق باش سا | Aq bash sá. The Marsh Harrier, *Circus æruginosus*.

اق قوچقاچ | Aq quehqách. The Tree Sparrow, *Passer montanus*.

الاباش كورك } Alá básh kurak aurdák. The Common Teal, *Querquedula*
اورداك } *crecca*.

الاچيكيت | Alá chikit. The Black-throated Wheatear, *Saxicola*

الاسوقان | Alá soqán. The White Stork, *Ciconia alba*. [deserti.

الغاز اورداك | Alá gház aurdák. The Merganser, *Mergus castor*.

الغورالاي | Alá ghurálái. The Grey Shrike, *Lanius Homeyeri*.

الاقارغه | Alá qárga. The Hooded Crow, *Corvus cornix*.

اورداك | Aurdák. Equivalent to our word 'duck', but applied specially to the Mallard, *Anas boschas*.

اوقار | Auqár. The Grey Heron, *Ardea cinerea*. See عفار.

اولار | Aulár. The name given to two species of Snow-cocks or Snow-pheasants, viz., *Tetraogallus himalayensis* and *Tetraogallus tibetanus*.

اوي قارلوغاج | Ui qárloghách. The Common Swallow, *Hirundo rustica*.

ایاغ سیز Ayágh siz. The name given to a Night-jar or Goatsucker, *Caprimulgus arenicolor*.

ایٹالگو Aitalgu. The female of the 'Shunqár, *Falco Hendersoni*.

ایساک Aisák. Name of a bird about the size of a Thrush.

ایله تورغاي Ili torghai. The Bokhara Lark, *Melanocorypha torquata*.

بالیقچی Báliqchi. The name of the Common and Lesser Terns, *Sterna fluviatilis* and *Sternula minuta*.

بای قوش Báí qush. The Snowy Owl, *Nyctea nivea*.

بحری (A.) Bahri. The Peregrine Falcon, *Falco peregrinus*.

بر توغرام Bir toghrá'm. A small Wren, *Troglodytes pallidus*.

برگوت Birgut or بورگوت Burgut. The Golden Eagle, *Aquila chrysaetus*. See قراقوش

بوژ اورداک Boz aurdák. The Smew, *Mergellus albellus*.

بوژ چیکیت Boz chikit. The Wheatear, *Saxicola isabellina*.

بوژ سا Boz sá. The Pale Harrier, *Circus Swainsonii*.

بوژ سوندوک Boz sunduk. The Water Pipit, *Anthus aquaticus*.

بوژ غورالای Boz ghurálái. The Desert Shrike, *Lanius arenarius*.

بوژ لاجین Boz láchin. The name of a Falcon, *Falco Tscherniaëvi*.

بغیتان Baghitáq. The Large Sand Grouse, *Pterocles arenarius*.

بلبل Bulbul. The Barred Warbler, *Nisoria undata*. [وتوالاق]

بیدنه Baidina. The Common Quail, *Coturnix communis*. See

پاختک Pákhtaq; cf. فاخته Pers. The Kashghar Ring-Dove, *Turtur Stoliczkæ*.

پوپشک } Popshak torghai. The Crested Lark, *Galerita magna*.

تورغاي

پور باش Pur bash. The Mountain Finch, *Montifringilla hæmatorpygia*.

پور تومشوق } Pur tumshuk qárg'ha. The Rook, *Corvus frugilegus*.

قارغه

تاغ توموشوق Tágh tumuchuq. Swinhoe's Finch, *Carpodacus mongolicus*.

تاغ قارغاسی Tágh qárg'hási. The Alpine Chough, *Pyrrhocorax alpinus*.

- تاغ قارلوقچا Tagh qárloghách. The Crag Martin, *Ptionoprogne rupestris*.
- تاغ قوچقاچي Tagh quchqáchi. The name given to several species of passerine birds found only in the mountains.
- تاغ هوپوپي Tagh hupupi. The Bohemian Waxwing, *Ampelis garrula*.
- تراچي Taráchi. The Willow Sparrow, *Passer salicicolus*.
- توخوناك قارغه Tukhunák kárga. The Jackdaw, *Colæus monedula*.
- توخي Tokhi. A Fowl. See قوم توخي.
- توز Toz. The Pea-fowl, *Pavo cristatus*.
- تورغاي Torghai. A Lark.
- تورولغو Torulghu. The Turtle Dove, *Turtur auritus*.
- تورومطاي Turumtai. The Merlin, *Lithofalco aesalon*. In India this name is applied to a different species, viz., *Hypotiorchis chicquera*, the Red-headed Merlin.
- توخمك سا Tokhmai sá. The Long-legged Buzzard, *Buteo ferox*.
- توغراق }
قوچقاچي } Toghraq quchqáchi. A Rose Finch, *Propasser* —.
- توموچوق Tumochuq. The name given to a species of Finch, *Erythrospiza obsoleta*.
- جغالباي Jaghalbai. The Hobby, *Hypotriorchis subbuteo*.
- جنگ جى Jing jing. The Bearded Reedling, *Calamophilus biarmicus*.
- جنگسا Jingsa. The Indian Bush-chat, *Pratincola indica*.
- جىگدا چوك Jigda chuk. The Black-throated Thrush, *Planesticus atrogularis*.
- چاسغسوارداك Cha sughsu aurdák. The Pintail Duck, *Dafila acuta*.
- چاغچي Chaghechi. The Indian Blue Throat, *Cyanecula succica*.
- چا قوچقاچ Cha quchqách. The name of a Bunting, *Emberiza schœnicola*.
- چاغونداك Chaghundák. The Bactrian Owlet, *Athene bactriana*.
- چمن Chaman. The Lapwing, *Vanellus cristatus*.
- چولاندورغاي Chulán torghái. A small Lark, *Alandula pispoletta*.

- چوللوک Chulloq. A name applied to several species of Plover.
 چومغاق Chumigháq. The Little Grebe, *Podiceps minor*.
 چینگچی Chighohi. A species of Reed Warbler, *Acrocephalus na-
 ororhynchus*.
 چیکیت Chikit. A Wheatear, *Saxicola*.
 چیکیت } Chikit qanát aurdak. The White-eyed Duck, *Aythya*
 قنات اورداک } *nyroca*.
 خرونه Kharuna. The Water Hen, *Gallinula chloropus*. See
 قودن.
 زانچه Zaghcha. The Andijani name for the Jackdaw. See
 ئوخوناك قارغه.
 زرغلدات Zarghaldáq. The Andijani name for the Golden Oriole.
 سوپیا See.
 زغارات Zagháráq. The Green Sandpiper, *Actitis ochropus*.
 زونگاق Zungáq. *Podoces humilis*.
 سا Sá. The name given to Buzzards, Harriers and Kites.
 ساج Sách. The Rose-coloured Starling, *Pastor roseus*.
 سالوار Sálwár. The Cinereous Vulture, *Fultur monachus*.
 ساریغ سوندوک Sarigh sunduk. The Yellow-headed Wagtail, *Budytes
 citreola*.
 ساریغ قوچقاج Sarigh quchqách. The Red-headed Bunting, *Eupiza
 luteola*.
 سفزغان Saghizghán. The White-rumped Magpie, *Pica bactriana*.
 سقوجاق Sokocháq. A Wood-pecker, *Picus leucopterus*.
 سن اورداک Sun aurdák. The Mallard, *Anas boschas*.
 سوپیا Sopiá. The Indian Oriole, *Oriolus kundoo*.
 سورام Surám. A Wren Warbler, *Rhopophilus pekinensis*.
 سوقن Soqan. A Stork, *Ciconia*.
 سوندوک Sunduk. The Common Wagtail, *Motacilla alba*.
 سیرام Sairám. The Marsh Pipit, *Corydalla Richardi*.
 شایاراق چوللوک Sháyáráq chulloq. The Indian Ringed Plover, *Egialites
 fluviatilis*.
 شونقار Shunqár. The Shunkar Falcon, *Falco Hendersoni*.

- ھایتورغاي Sái torghái. The Horned Lark, *Otocoris penicillata*. See
 فراقش تورغاي.
 صاي يامغور- } Sái yámghurchi. The Kentish Ring Plover, *Ægialophilus*
 چي } *cantianus*.
 عقار 'Uqár. A Heron. See اوقار and اقوقار.
 عكه 'Akka. The Andijani name for the Magpie. See سفزغان.
 غاز Gház. The Grey Lag Goose, *Anser cinereus*.
 غجي Ghiji. The Lammergeyer, *Gypaetus barbatus*.
 غوركي Ghorki. The Brown-headed Gull, *Xema brunneicephala*.
 قارچيغه Qárchigha. The Goshawk, *Astur palumbarius*.
 قارغه Qárga. A Crow.
 قارلוגاج Qárloghách. A Swallow.
 قاشقالداق Qáshqáldáq. The Common Coot, *Fulica atra*.
 قاشقال پيچك Qáqshál pichak. The Stilt, *Himantopus intermedius*.
 قياق تورغاي Qapáq torghái. The Crested Lark, *Galerida magna*. See
 پوپشك تورغاي.
 قرا باش } Qará báš quchqách. A Bunting, *Emberiza pyrrhuloides*.
 قوچقاج }
 قرا چيكيك Qará chikit. A Wheatear, *Saxicola Hendersoni*.
 قرا سا Qará sá. A Buzzard, *Buteo japonicus*.
 قرا سوغن Qará soqan. The Black Stork, *Oiconia nigra*.
 قرا غاز Qará gház. The Common Cormorant, *Graculus carbo*.
 قرا قاشتورغاي Qará kásh torghái. The Horned Lark, *Otocoris peni-*
cillata.
 قرا قارغه Qará qárga. The Black Crow, *Corvus culminatus*.
 قرا قوچقاج Qará kúchqach. The Common Starling, *Sturnus vulgaris*.
 قرا قوش Qara quash. The local name in Eastern Turkistan for the
 Golden Eagle, *Aquila chrysaetus*. See چورگوت.
 قرغاول Qirghaul. The Yarkand Pheasant, *Phasianus Shawi*.
 قرغاي Qarghai. The Sparrow Hawk, *Accipiter nisus*.

- قزىل باش } Qizil báš aurdák. The Red-crested Pochard, *Branta*
 اورداك } *rufina*.
 قزىل تومشوق } Qizil tumshuq qárg̃ha. The Red-billed Chough, *Fregilus*
 قارغه } *graculus*.
 قزىل كوركناك } Qizil kurkánák. The Redstart, *Ruticilla erythrogastra*.
 قلانى سا } Qiláti sá. The female Hen-Harrier, *Circus cyaneus*.
 قل يورغه } Qil yurgha. The Swiftfoot, *Podoces Hendersoni*.
 قم توخيسي } Qum tokhisi. The Little Bustard, *Otis tetrax*.
 قم سغزغانى } Qum saghizghani. A name sometimes given to *Podoces*
Hendersoni. See قل يورغه.
 قناق اورداك } Qanak aurdák. The Shoveller, *Spatula clypeata*.
 قنابچى } Qanáichi. The Reed Warbler, *Acrocephalus arundinaceus*.
 قوچقاچ } Quqhách. Any small passerine bird; equivalent to *Chiria*
 in Hindustani.
 قوش } Qush. Any large sized bird.
 قوداي } Qodái. The Swan, *Cygnus olor*.
 قودان } Qodan. The Water Hen, *Gallinula chloropus*.
 قوزغون } Quzghun. The Tibetan Raven, *Corvus tibetanus*.
 كرچ قارلوغاچ } Kirich qarloghách. A Swift, *Oypsels peginensis*.
 كرك اورداك } Karak aurdák. The Blue-winged Teal, *Querquedula circia*.
 ككليك } Kaklik. The Chukor Partridge, *Oaccabis chukor*.
 ككوك } Kakkok. The Common Cuckoo, *Cuculus canorus*.
 كلكھات } Kalkhát. The Andijani name for the Kite.
 كوركناك } Kurgánák. The Kestrel, *Tinnunculus alaudarius*.
 كوكتالغو } Koktalghu. A Tree Warbler, *Phyllopneuste rama*.
 كوكھا } Kok sá. The male Hen Harrier, *Circus cyaneus*.
 كوكسوندوك } Kok sunduk. A Wagtail, *Motacilla personata*.
 كوك قارغه } Kok qárg̃ha. The European Roller, *Coracias garrula*.
 كوگان } Kōgan. The Indian Stock-pigeon, *Palumbœna Evermanni*.
 كول بوتهسى } Kul buqahsi. The Bittern, *Botaurus stellaris*.
 كوشكال } Kōshkal. The Stock-pigeon, *Columba ænas*.

- گییه Giya (? گریه Girya). The Sea Eagle, *Haliaetus leucoryphus*.
- لاچین Láchin. The Barbary Falcon, *Falco barbarus*.
- لگ لگ Laglag. The White Stork, *Ciconia alba*. See الاسواق.
- محر مچی Mahramchi. The Common Snipe, *Gallinago scolopacinus*.
- مشک یاپالاق Mashak yápáláq. The Long-eared Owl, *Otus vulgaris*.
- مشک یام-غورچی } Mashk yámghurchi. The Greenshanks, *Totanus glottis*.
- میزان سا Mizán sá. The Kite, *Milvus melanotis*.
- مینہ Maina. The Black-bird, *Merula vulgaris*.
- وتوالق Watwáláq. The local Yarkandi name for the common Quail. See بیدنه.
- هانگفروت Hangghut. The Brahminy Duck, *Oasarca rutila*.
- هوپوپ Hüpüp. The Common Hoopoe, *Upupa epops*.
- هوی قوش Hui qush. The Great Eagle Owl, *Bubo maximus*.
- یارا کبتر Yawa kabtar. The Blue Hill Pigeon, *Columba rupestris*.
- یاپالاق Yápáláq. The Short-eared Owl, *Otus brachyotus*.
- یار قارلوقاچ Yár qárloghách. A Swift, *Cypselus acuticauda*.
- یامغورچی Yamghurchi. A name applied to several species of Waders.
- یکن توخیسی Yekan tokhisi. The Water Rail, *Rallus aquaticus*.

TURKI NAMES OF PLANTS.

By J. SCULLY, Esq.

1

- اچی چجناک áchî chijghák.
- اچیغ انار áchigh ánár.
- اخیچی کوکی ikhchî kokî. Rape or Cole-seed, *Brassica napus*.
- ادر اسمان ádrásmán. *Peganum harmala*. See gul ásmán.

- آرامدان árámadán. Name of a tree, undetermined.
 ارپه árpa. Barley, *Hordeum distichum*.
 ارپه بادیان árpa bádyán. *Anisum sativum*.
 ارپه خان árpa khán.
 ارتیش ártish. The Pencil Cedar, *Juniperus excelsa*.
 ارمن árman. Wormwood, *Artemisia vulgaris*.
 ازغان ázghán. A species of Rose, *Rosa*.
 اغچه یوغوچ ághácha yughuch. A Cucurbitaceous Plant.
 افتاب پرست áftáb parast. Sunflower, *Helianthus annuus*.
 افیون گلی áfiun guli. Opium Poppy, *Papaver somniferum*.
 اقارمن áq árman. A species of Wormwood, *Artemisia*.
 اق المہ áq álma. White Apple, *Pyrus malus*.
 اق اوزوم áq auzum. White Grape, *Vitis vinifera*.
 اق بادیان áq bádyán. Coriander, *Coriandrum sativum*.
 اق باش اوت áq básh aut. Celery, *Apium graveolens*.
 اق پیاز áq piaz. A variety of Onion, *Allium cepa*.
 اق تیکان áq tikán. Sea Buckthorn, *Hippophaë rhamnoides*.
 اق تیکان áq tikán. A Shrub, *Lycium ruthenicum*.
 اق جیگده áq jigda. White Eleagnus.
 اق گل عنبر áq gul' anbar. A Centaurea.
 اق چیچک اوت áq chichik áut. A species of Cress, *Lepidium latifolium*.
 اق قوناق áq qonáq. The Great Millet, *Holcus sorghum*.
 اق لاله áq lála.
 اق لوبیا áq lobiá. White Pulse, *Dolichos lablab*.
 اق لیلی قزاق áq lailí qazáq. White Opium Poppy, *Papaver somniferum*.
 اق نبات áq nabát. A variety of Sweet Melon, *Cucumis melo*.
 الا کوكي ála koki.
 التونگل áltun gul. "Golden Flower."
 القات álqát.
 المورت álmurt. The Pear. See Amurt.
 المہ álma. The Apple, *Pyrus malus* or *Pyrus indica*.
 آلوبالو álo bálu.
 الوچه álucha.

- آمورت ámurt. The Pear, *Pyrus communis*.
 انار ánár. The Pomegranate, *Punica granatum*.
 انارگلی ánár guli. Pomegranate blossom.
 انجیر ánjír. The Fig, *Ficus carica*.
 اندیجان ارزومی ándiján ánzumí.
 ندیجان گل ándiján gul.
 اوجمه áujma. The Mulberry, *Morus alba*.
 اوجون áujun.
 اوروک áuruk. ? The Plum.
 اورهدان áurahdán. A Boragewort, *Asperugo procumbens*.
 اوزوک áuzuk.
 اوزون توررپ áuzun turup. Knol Kohl, *Brassica oleracea caulo-rapa*.
 اوسمه áusma.
 اوسون áusun. The Wild Cabbage, *Brassica oleracea*.
 اوعزی تیکان áughri tikán. A Leguminous plant, *Astragalus sp.*
 اولجا áuljá. The Apricot. See Aulja.
 اولجه áulja. The Apricot, *Prunus armeniaca*.
 اولمناق áwul munáq. A species of Spurge, *Euphorbia lathyris*.
 اوردان áuidán. A species of Madder, *Rubia sp.*
 ایتاوزوم áit auzum.
 ایتخمکپلی áit khmak paliki. See ait qoghün.
 ایتقوغون áit qoghun. A variety of Sweet Melon, *Cucumis melo*.
 ایرکاک اوجمه áirkák aujma.
 ایرکاک قوموش áirkák qomush.
 ایشاک قوموش áishák qomush. Orache, *Atriplex sp.*
 ایگر áigar. Sweet Flag, *Acorus calamus*.
 ایناکفشتی áínák fashti. Castor oil seeds, *Ricinus communis*.
 اییغفورماچی áyigh qormáchi.

ب

- باجینچامغور bájin chámghur.
 باجینقوغون bajin qoghun. Chinese Melon.
 باجینگ bájín gulf. A Larkspur, *Delphinium incanum*.

- بادام bádám. The Almond, *Amygdalus communis*.
 باقا báqlá. A Bean, *Faba sp.*
 بدنگان badingan. The Egg-Plant, *Solanum melongena*.
 بغدای bughdái. Common Wheat, *Triticum vulgare*.
 بوخوار bukhwár. A Cruciferous plant.
 بودوشقاق budushqáq. Burweed, *Xanthium strumarium*.
 بورتسی burtai. A Chenopod, *Eurotia ceratoides*.
 بوریاوزرم bori áuzum. Bladder-Senna, *Colutea arborescens*.
 بورپورچاقی bori porcháqi.
 بوربسمساقی bori samsáqi. A Broomrape, *Orobanche sp.*
 بوریبیاپورماقی bori yápurmáqi.
 بوغز bughaz. Corn.
 بویه buya. A Leguminous plant, *Sophora alopecuroides*.
 بیدة baida. Purple Medick or Lucerne, *Medicago sativa*.
 بی سی baisai. The Turnip, *Brassica rapa*.
 بیشک شیرین bëshak shirin. A variety of Sweet Melon.
 بیہی bíhi. The Quince, *Pyrus cydonia*.

پ

- پاقہ بوتی } páqa puti qomush. A species of Reed.
 قوموش }
 پاقہ یاپورماق páqa yápurmáq. The Greater Plantain, *Plantago major*.
 پالک pálak. ? *Rhinacanthus communis*.
 پنگان patingan. The Egg-Apple plant, *Solanum melongena*.
 پوپوک سپورگی pupuk suporgi. A Reed, *Arundo*.
 پورچاق porcháq. Common Pea, *Pisum sativum*.
 پیاز piaz. Onion, *Allium cepa*.
 پیازک piázak.
 پیزک pizak. A Grass, *Calamagrostis laxa*.

ت

- تاتلیغ انار tátligh ánár.
 تاتلیغ شفتول tátligh shaftul. ? The Nectarine, *Amygdalus persica*.
 تاج خوراز táj khoráz. See Taji gul.

گل تاجي گل táji gul. The Cockscomb, *Celosia cristata*.

تار بوز tárbuz. The Water Melon, *Citrullus vulgaris*.

تار بوزك tárbuzak. A Cucurbitaceous plant, *Momordica Charantia*.

تار غاچ tárgách.

تال tál.

تورپ turup. The Radish, *Raphanus sativus*.

تريغ tarigh. Millet, *Panicum miliaceum*.

تماكو tamáku. Tobacco, *Nicotiana tabacum*.

توتوشقاق tutushqáq. Burdock, *Lappa major*.

توخوماك tukhumák. A Leguminous plant, *Sophora japonica*.

توزغات tozgháq.

توغاچ toghách.

توغراغو toghraghu.

توغراق toghráq. A Poplar, *Populus balsamifera*.

توغراق تيلي toghráq tilí.

توكليك اوت toklik áut.

توگه تاپاني tuga tápáni.

تيراک tairak. The White Poplar, *Populus alba*.

تيرتي سوكت tairti sugat. The Weeping Willow, *Salix babylonica*.

تلبه بيده talba baida. White Melilot, *Melilotus alba*.

ج

جاماقه jámáqa. A Pondweed, *Potamogeton natans*.

جانگدو jángdu. A small Bean.

جنسته janasta. The Plum, *Prunus domestica*.

جواني juwani. A species of Dill, *Anethum Sowa*.

جوخارگل jokhár gul.

جوري قند jori qand. A variety of Sweet Melon.

جيغده jighda. A variety of Sweet Melon.

جيگده jigda. A species of Oleaster, *Eleagnus angustifolia*.

چ

چالنگ cháláng. See Chilang.

چامغور chámghur. The Turnip, *Brassica rapa*.

- چامغور } chamghur chuchuki.
 چوچوړي }
 چاي کوكي chái koki.
 چقير اوجمه chaqir ánjma.
 چيلنگ chilang. Cabbage, *Brassica oleracea*.
 چوجون اوت chujun áut. A species of Millet, *Panicum crus-galli*.
 چوجون تريخ chujun tarigh. A Fodder grass, *Panicum glaucum*.
 چوچوك بويه chuchuk buya. A species of liquorice, *Glycyrrhiza glandifera*.
 چوچوك بويه } chuchuk buya munjáqi.
 مونجاقي }
 چينغ chigh. A Grass, *Arundinella nepalensis*.
 چينغيرتماق chighírtmaq. A species of Iris, *Iris soongarica*.
 چيلان chilán. The Jujube, *Zizyphus vulgaris*.
 چيله زرداك chilka zardák.
 چيلكي chilki. A variety of Sweet Melon.
 چينار chinár. The Oriental Plane Tree, *Platanus orientalis*.
 چيني گل chiní gul. China Aster.

خ

- خان گلي khán guli. French Marigold, *Tagetes patula*.
 خطاي خينه khatái khina. A species of garden Balsam.
 خطاي سپوز } khatái supurgisi. An Amaranth, *Amaranthus blitum*.
 كيسې }
 خطاي گل khatái gul. China Aster, *Callistephus chinensis*.
 خوخاء khokhá. A Composite plant.
 خوخه تيگان khokha tikán. A kind of Thistle, *Oniscus arvensis*.
 خوخه گل khokha gul. ? *Oniscus arvensis*.
 خونگان khongán. Cucumber, *Cucumis sativus*.

د

- دارا dáwá. Tamarisk, *Tamarix sp.*
 داردر dáudar. French Bean, *Phaseolus vulgaris*.
 دودو dodo. A species of Yam, *Dioscorea deltoidea*.

ز

- زاغون zaghun. Wild Nevev, *Brassica campestris*.
 زردک zardak. The Carrot, *Daucus carota*.
 زرنگزہ zarangza. The Safflower Plant, *Carthamus tinctorius*.
 زعفرگل za'far gul. ? Saffron plant, *Crocus sativus*.
 زغیر zighir. Flax, *Linum usitatissimum*.
 زرخ zikh.

س

- سابقسزگل sapaqsiz gul. = sapaqsi gul.
 سپورگی supurzi. An Amaranth, *Amaranthus blitum*.
 سپورگی supurgi. A species of Tamarisk, *Tamarix elongata*.
 سده sada. The Elm, *Ulmus erosa*.
 سرخ ازغان sarigh azghán. Yellow Rose, *Rosa brunonii*.
 سرخ اوت sarigh áut. A grass found growing at high elevations.
 سرخ بویه sarigh buya. A Leguminous plant, *Sophora sp.*
 سرخ تلبه بیده sarigh talba baida. Common or Yellow Melilot, *Melilotus officinalis*.
 سرخ زاردک sarigh zárdak.
 سرخ سبه sarigh sabba. Pot Marigold, *Calendula officinalis*.
 سرخ سنبرگل sarigh sanbar gul. African Marigold, *Tagetes erecta*.
 سرخ سوگت sarigh sugat. "Yellow Willow."
 سرخ عشق } sarigh 'ashq pichák. Indian Cress, *Tropeolum majus*.
 پیچان }
 سرخ گل sarigh gul. A Marigold, *Calendula stellata*.
 سرخ هفرانگ sarigh hafaráng. *Tropeolum*.
 سرخ یورگاماش sarigh yurgámách. A species of Dodder, *Ouscuta sp.*
 سریمساق sarimsáq. ? Garlic, *Allium sativum*.
 سمساق پیاز samsáq piáz. A variety of Onion, *Allium cepa*.
 سوتلیک اوت sutlik áut. A species of Sow-thistle, *Mulgedium tataricum*.
 سوسن گل sosun gul. A species of *Iris*.
 سوسن عشق } sosuni 'ashq pichak.
 پیچک }

- سوك sok. A Grass, *Polypogon monspeliensis*.
 سوكت sugat. A Willow, *Salix daphnoides*.
 سولوق اوت suluq áut.
 سونگ پياز song piáz.
 سپاه دانه siáhdána. Fennel Flower, *Nigella sativa*.
 سيمز اوت simaz áut.

ش

- شاتوت shátut. A species of Mulberry, *Morus laevigata*.
 شال shál. The Rice plant, *Oryza sativa*.
 شالدير بويه shaldîr buya.
 شالدير لاغوج shaldîr lághuch. A Leguminous plant, *Sphaerophysa* sp.
 شفتول shaftul. The Peach, *Prunus persica*.
 شلغوت shalghut.
 شمشا shumshá. The Ferngreck, *Trigonella foenum-graecum*.
 شوخلا shokhlá. A species of Night-shade, *Solanum nigrum*.
 شوم بويه shum buya. A species of Broomrape, *Phelipaea indica*.

ع

- عشق پيچاك 'asuq pichák. A Bindweed, *Pharbitis nil*.
 عينالو 'ainálu.

غ

- غشه ghasha.

ف

- فاخته اوروغي fákhta áurughi. Cotton seeds, *Gossypium herbaceum*.
 فالاك fálák. *Tribulus terrestris*.
 فياز fiáz. Onion, *Allium cepa*.
 فرنگ گلي farang gulí.

ق

- قاپاق qápáq. The Gourd, *Cucurbita pepo*.
 قاپاق تيراك qápáq tairák. "Gourd Poplar."
 قارغه تامغايي qárga tamgháqi. A Composite plant, *Phænopus orientalis*.

- قارغه تامغاقى qárgħa tamgháqi. A Figwort, *Dodartia orientalis*.
 قارغه تامغاقى } qárgħa tamgháqi áut. A Leguminous plant, *Oxytropis*
 قى اوت } *sophora*.
 قارغه جىگده سى qárgħa jigdahsi. A species of *Eleagnus*.
 قاغز اوت qághaz áut. Milk Thistle, *Sonchus oleraceus*.
 قامچى گل qámchi gul. The Love-lies-bleeding Amaranth, *Amaranthus candatus*.
 قامچى گل qámchi gul. Garden Persicary, *Polygonum orientale*.
 قامغاق qámgháq. A Saltwort, *Salsola collina*.
 قايروم qáirum.
 قرا ارمن qará árman.
 قرا اوجمه qará áujma. A species of Mulberry, *Morus atro-purpurea*.
 قرا اوروك qará áuruk. Apricot, *Prunus armeniaoa*.
 قرا سونه qará sona. A species of Sow-thistle, *Sonchus*.
 قرا شوخلا qará shokhalá. A Night-shade, *Solanum nigrum*.
 قرا گل qará gul. A species of Marsh Mallow, *Althaea rosea*.
 قرا يغاچ qará yughách. A species of Ash, *Fraxinus Moorcroftiana*.
 قزىل ازغان qazíl ázghán. Red Rose.
 قزىل پاچاق qizíl pácháq.
 قزىل پياز qizíl piáz. Red onion.
 قزىل توررپ qizíl turup. Red Radish, *Raphanus sativus*.
 قزىل جنسته qizil janasta.
 قزىل جىگده qizíl jigda. An Oleaster, *Eleagnus parviflora*.
 قزىل خينه qizil khina. A variety of garden Balsam.
 قزىل زرداك qizil zardák.
 قزىل گل qizíl gul. The Rose, *Rosa macrophylla*.
 قزىل لاله qizíl lálá.
 قزىل لايلى قزاق qizíl laili qazáq. Red Opium Poppy, *Papaver somniferum*.
 قزىل مورچ qizíl moreh. Spur Pepper, *Capsicum frutescens*.
 قزىل يولغون qizíl yulghun. Tamarisk, *Tamarix gallica*.
 قلاقاى qaláqái. ? *Amaranthus*.
 قوغون qoghun. Sweet Melon.
 قوكركى qo koki. A species of Sorrel, *Rumex klotschianus*.

- قوموش qomush. A Reed, *Arundo madagascariensis*.
 قومي qummi. The Melon, *Cucumis melo*.
 قوناق qonáq. Maize or Indian-corn, *Zea mays*.
 قونگان qongán. Cucumber, *Cucumis sativus*.
 قوی کوی quikoki. The Dock, *Rumex aquaticus*.
 قیاق اوت qiyáq áut. A species of grass, *Calamagrostis Nepalensis*.
 قیچی qichi. Indian Mustard, *Sinapis juneca*.
 قیشلیک تورپ qaishlik turup. A Cruciferous plant.

ک

- کاه لوه káhlloh. The Persimon, *Diospyros kaki*.
 کبرایا kibráyá. An Umbelliferous plant.
 کرم karam.
 کرمک kurmak.
 ککرة kakra.
 ککوک کوی kakkok koki. Sow-thistle, *Sonchus sp.*
 ککیه kakia. A Spurge, *Euphorbia sp.*
 کمپه kampa. A species of Wormwood, *Artemisia sp.*
 کوده koda. Onion, *Allium cepa*.
 کوده آمورت koda amurt. ? A variety of Pear.
 کوزگی بغدای kozgi bughdái.
 کوک شوخلا kok shokhlá. A species of Night-shade, *Solanum nigrum*.
 کوک عشقه } kok 'ashqa pichák.
 کپیچاک }
 کوک لوبیا kok lobiá. A variety of Bean.
 کوکنار koknár. The Field Poppy, *Papaver rhæas*.
 کوکیا kokia. An Onagrad, *Oenothera mollissima*.
 کونجد kunjud. A Cruciferous plant.
 کوه kawa.
 کایباز kaibaz. The Cotton plant, *Gossypium herbaceum*.
 کایباز اناسی kaibaz anasi. A plant of the Mallow family, *Abutil*
avicennæ.
 کیک تیلی kaik tili. A Spurge, *Euphorbia sp.*

- كيكيه kaikia. *Acroptilon picris*.
 كيندر kaindir. The Hemp Plant, *Cannabis sativa*.
 كيويه kaivia. Fennel, *Foeniculum vulgare*.

ک

- گل اسمان gul ásmán. A Ruewort, *Peganum harmala*.
 گل خينه سي gul khinahsi. Garden Balsam, *Impatiens balsamina*.
 گل سوسون gul súsun. See Susun gul.
 گل عنبر gul 'anbar. A species of *Centaurea*.
 گل نافادان gul náfádán. A Larkspur, *Delphinium sp.*
 گل نفشه gul nafsha. A species of Mallow.
 گورونج gurunj. Rice, *Oryza sativa*.
 گيلاس gailás.

ل

- لوبيا lobia. A Pulse, *Dolichos lablab*.
 لوله كوكي lola koki.
 ليلي قزاق laili qazáq. The Poppy, *Papaver*.

م

- ماش másh. The Bean, *Phaseolus mungo*.
 مالغون málghun.
 مرگان خينه majgán khína. A species of Balsam.
 مخمل گل mukhmal gul.
 مناقي manáqi.
 مندر mandar. An Asclepiad, *Cynanchum sp.*
 مودان گل mudán gul.
 مونده munda.

ن

- نارنجي عشق } narinji 'ashq picháq.
 پيچك }
 ناشوت nashwat. The Pear, *Pyrus communis*.
 نخود nakhud.
 نرگس nargas. A Narcissus.

8

هوارنگ گل hawá rang gul. A species of Mallow, *Malva parviflora*.

هفت رنگ haft rang. Great Indian Cress, See Hafarang.

هفزانگ hafarang. The Great Indian Cress or Nasturtium, *Tropaeolum majus*.

هم شیبهر hamshibar. Common Mallow, *Malva sylvestris*.

هندوستان گل hindostán gul. *Gomphrena globosa*.

هویل موناک hawil monák. *Euphorbia lathyris*. See awul monaq.

ي

يارمه قمچي گل yárma qamchi gul. A Persicary, *Polygonum sp.*

يازغي بغدای yázghi bughdái.

باشیل عشق } yáshíl 'ashq picháq. A Leguminous plant.
پیچاق }

یالپوز yálpuz. A species of Goosefoot, *Chenopodium vulvaria*.

یامغا سوت yámghásut. Coriander, *Coriandrum sativum*.

یانتاق yántáq. The Camel Plant, *Alhagi maurorum*.

یانگغاق yánggháq. The Walnut, *Juglans regia*.

یاوا بیدە yáwá baida. Wild Lucerne.

یاوا گل عنبر yáwá gul 'anbar. Wild Centaurea.

یغاچ yaghách. A Tree, *Ailanthus excelsa*.

یک قوموشی yik qomushi. Goosefoot, *Chenopodium album*.

یکن yakan. Reed-mace, *Typha angustifolia*.

یورگاماج yurgámách. Bindweed, *Convolvulus arvensis*.

یولغون yulghun. Tamarisk, *Tamarix gallica*.

یومغاق سبوت yumgháq sabut. Coriander.



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(Nos. I to IV.—1878: with 15 plates.)

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THE NATURAL HISTORY SECRETARY.

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"It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science in different parts of *Asia*, will commit their observations to writing, and send them to the Asiatic Society at Calcutta. It will languish, if such communications shall be long intermitted; and it will die away, if they shall entirely cease." SIR WM. JONES.  
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- No. I.—Containing pp. 1—52, with Plates 1, 2, 10, 11, and with four wood-cuts,—was issued on 24th May, 1878.
- No. II.—Containing pp. 53—124, and one plate unnumbered—was issued 10th July, 1878.
- No. III.—Containing pp. 125—174, with Plates 6, 7, 8,—was issued 28th October, 1878.
- No. IV.—Containing pp. 175—237, with Plates 3, 4, 5, 5A, 9, 12, 13, 14, was issued April 6th, 1879.
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# JOURNAL

OF THE

## ASIATIC SOCIETY OF BENGAL.

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### Part II.—PHYSICAL SCIENCE.

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No. I.—1878.

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I.—*Description of* *Ruticilla schisticeps*, *Hodgs.*—By W. T. BLANFORD,  
F. R. S.

(Received October 11th, 1876 ;—Read March 7th, 1877.)

(With Plate I.)

Since the original description of the male of this bird was published in the appendix to the first 'Catalogue of the specimens and drawings of Mammalia and Birds of Nepal and Thibet' presented by Mr. Hodgson to the British Museum, I am not aware that anything has been added to its history. It does not appear to have been seen by Blyth or Jerdon, there is no specimen in the Society's old collection, nor to the best of my belief has there hitherto been one in the Indian Museum, and the bird has not yet, so far as I know, been found in the western Himalayas or in Turkestan. Unless Colonel Prejevalski has obtained it in Mongolia, I do not think it has hitherto been procured elsewhere than in the Tibetan region north of Sikkim and Nepal. The female, so far as I can learn, has not been described, although there appears to be a figure of it amongst Mr. Hodgson's drawings.

I have just received a pair of this rare bird from Mr. Mandelli, and the following is a description of both sexes.

*Male.* Crown of head and nape, greyish blue, paler in front, becoming rather darker on the nape. A narrow band on the forehead, lores, sides of head and neck, chin and sides of throat, and back glossy black. Scapularies

black at the base, but with a broad tip of ferruginous or rich chestnut, lower rump and upper tail coverts the same. Quills black; a broad white band, formed by the whole of the median coverts, and the basal portions of the greater coverts, together with the outer edges of the last 3 or 4 secondaries (tertiaries of some writers), traverses the wing longitudinally. Tail black. Beneath, there is a white spot in the middle of the throat, in contact with the rich ferruginous tint of the breast, abdomen and lower tail coverts, which are the same colour as the rump; axillaries white, under wing coverts black and white mixed, inner margins of quills dusky grey. Wing, 3.5; tail, 2.95; tarsus, 0.93; culmen, 0.62; bill from front, 0.4.

*Female.* Olive brown above, forehead, lores and sides of head paler and more rufous; rump, upper tail coverts and basal portion of all the tail feathers, except the middle pair, ferruginous; central rectrices and terminal portion of all the others black, rather browner than in the male however; quills brownish black with paler brown edges, and a white bar over the wing as in the male. Chin, throat, breast, sides of abdomen and flanks rufescent brown with an olive tinge; a white spot, as in the male, in the centre of the throat; middle of the abdomen paler, lower tail coverts pale rufous. Wing 3.2, tail 2.8.

Of course I have no means of ascertaining certainly that the female is correctly identified, as the birds were obtained by Mr. Mandelli's collectors, but the white breast-spot leaves very little doubt on this head. As regards the locality, the only information Mr. Mandelli can give me is that these birds were obtained in Tibet in the month of November 1875.

---

II.—*Aberrant Dentition of Felis Tigris*.—By R. LYDEKKER, B. A.

(Read 6th February, 1878.)

(With Plate II.)

In the accompanying plate (No. II), there is represented the right ramus of a mandible of an individual of *Felis tigris* which was killed in British Burma; this jaw is remarkable in that it carries an additional premolar. The normal number of lower molar teeth in the genus *Felis* is three, namely, two premolars, which are respectively the penultimate and ultimate of that series, and one true molar, which is the first of the latter series, and which is often known as the "carnassial tooth."

In the figured specimen, there is between the canine tooth and the penultimate premolar, a small and simple tooth, which is the ante-penultimate

tooth of the premolar series, and which, as we have seen, does not occur in the normal dentition of the genus *Felis*; on the left side of the figured jaw this additional premolar is absent.

The interest that attaches to the presence of this additional premolar in our specimen, is that in an extinct genus of *Felidae*, the normal number of the lower premolars was three in place of two, as in *Felis*. This extinct genus was named by M. Gervais *Pseudaelurus*,\* and the one species (*P. quadridentatus*) on which it was determined, was obtained from the miocene formation of Sansan in France; the species was previously named by De Blainville in his "Osteographie," *Felis quadridentatus* and *F. tetraodon*. Subsequently Professor Leidy† described a second species of the genus, under the name of *P. intrepidus*, from the Pliocene of Nebraska. Still later, I myself‡ described the lower jaw of a third species, *P. sivalensis*, from the Siwaliks of this country.

It is well known that the small number of the molar series which exists in the living *Felidae* is a highly specialized character, which is not found in the oldest carnivora, nor in many of those which are still living. The existence of an additional lower premolar in the Miocene and Pliocene genus *Pseudaelurus* shows that that genus is less specialized than *Felis*, and indicates that the former was probably the line through which the latter was described from some primitive carnivore in which the whole four of the typical premolar series were developed. The occasional occurrence of the ante-penultimate lower premolar in *Felis* must be regarded as an instance of "reversion" towards the genus *Pseudaelurus*.

\* "Zoologie et Paléontologie Françaises", Vol. I, p. 127.

† "Extinct Mammalia of Dakota and Nebraska," p. 62.

‡ "Records of Geological Survey of India," Vol. X., p. 83.



III.—*Record of the Occurrence of Earthquakes in Assam*  
C. S. I., V. C.,

| Date.                                                        | District.              | Time of Occurrence. |
|--------------------------------------------------------------|------------------------|---------------------|
| 15th February.                                               | Darrang, Mangaldai.    | 10.45 A. M.         |
| Do.                                                          | Kámrúp, Gauháti.       | 11 A. M.            |
| No reports reached from Goálpára, Nowgong, Lakhimpur,        |                        |                     |
| 23rd do.                                                     | Kámrúp, Barpetá.       | 11.50 P. M.         |
| Do.                                                          | Goálpára, Goálpára.    | 12.8 P. M.          |
| No reports reached from Gauháti, Darrang, Nowgong, Sibságar, |                        |                     |
| 28th do.                                                     | Goálpára, Goálpára.    | 10 P. M.            |
| Do.                                                          | Gáro Hills, Túrú.      | 11.40 P. M.         |
| No reports reached from Kámrúp, Darrang, Nowgong,            |                        |                     |
| March                                                        |                        |                     |
| 15th March.                                                  | Khási Hills, Shillong. | 3.33 P. M.          |
| No reports reached from Goálpára, Kámrúp, Darrang, Nowgong,  |                        |                     |
| 20th do.                                                     | Khási Hills, Shillong. | 5 A. M.             |
| No reports reached from Goálpára, Kámrúp, Darrang, Nowgong,  |                        |                     |
| April                                                        |                        |                     |
| 29th April.                                                  | Khási Hills, Shillong. | 10 P. M.            |
| No reports received from Goálpára, Kámrúp, Darrang, Nowgong, |                        |                     |
| May                                                          |                        |                     |
| 11th May.                                                    | Kámrúp, Gauháti.       | 9 P. M.             |
| Do.                                                          | Khási Hills, Shillong. | 9.10 P. M.          |
| Do.                                                          | Darrang, Tezpur.       | 9.15 P. M.          |
|                                                              |                        |                     |
| Do.                                                          | Nowgong, Nowgong.      | 9.30 P. M.          |
| No reports received from Goálpára, Sibságar, Lakhimpur,      |                        |                     |
| 17th May.                                                    | Khási Hills, Shillong. | 10.10 P. M.         |
| Do.                                                          | Darrang, Tezpur.       | 10.35 P. M.         |

during 1877. Communicated by COL. R. H. KEATINGE,  
Chief Commissioner.

| Duration.                                                        | Extent of damage if any, and general remarks.                                                                                                                                                                                                                          |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20 to 25 seconds.                                                | No damage, two distinct shocks and preceded by loud rumbling noise.                                                                                                                                                                                                    |
| A second.                                                        | No damage.                                                                                                                                                                                                                                                             |
| Sibságar, Sylhet, Cachár, Nága Hills, Gáro and Khási Hills.      |                                                                                                                                                                                                                                                                        |
| 4 seconds.                                                       | No damage.                                                                                                                                                                                                                                                             |
| 7 seconds.                                                       | Do.                                                                                                                                                                                                                                                                    |
| Lakhimpur, Sylhet, Cachár, Nága Hills, Gáro and Khási Hills.     |                                                                                                                                                                                                                                                                        |
| 8 seconds.                                                       | No damage. Slight shock.                                                                                                                                                                                                                                               |
| 30 seconds.                                                      | Do. do.                                                                                                                                                                                                                                                                |
| Sibságar, Lakhimpur, Sylhet, Cachár, Nága and Khási Hills.       |                                                                                                                                                                                                                                                                        |
| 1877.                                                            |                                                                                                                                                                                                                                                                        |
| 10 seconds.                                                      | No damage.                                                                                                                                                                                                                                                             |
| Sibságar, Lakhimpur, Sylhet, Cachár, Nága Hills, and Gáro Hills. |                                                                                                                                                                                                                                                                        |
| 5 seconds.                                                       | No damage.                                                                                                                                                                                                                                                             |
| Sibságar, Lakhimpur, Sylhet, Cachár, Nága and Gáro Hills.        |                                                                                                                                                                                                                                                                        |
| 1877.                                                            |                                                                                                                                                                                                                                                                        |
| 3 seconds.                                                       | No damage.                                                                                                                                                                                                                                                             |
| Sibságar, Lakhimpur, Sylhet, Cachár, Nága Hills and Gáro Hills.  |                                                                                                                                                                                                                                                                        |
| 1877.                                                            |                                                                                                                                                                                                                                                                        |
| 12 seconds.                                                      | No damage.                                                                                                                                                                                                                                                             |
| 45 seconds.                                                      | No damage.                                                                                                                                                                                                                                                             |
| 10 to 12 seconds.                                                | Two distinct shocks. Severe and very marked. No damage. Declared by Deputy Commissioner to be the severest felt since the great one in September 1875. The shocks were not preceded by the usual rumbling noise and were not quick and jerky, but long and undulating. |
| 5 seconds.                                                       | No damage. One sharp shock.                                                                                                                                                                                                                                            |
| Sylhet, Cachár, Nága Hills and Gáro Hills.                       |                                                                                                                                                                                                                                                                        |
| 30 seconds.                                                      | No damage.                                                                                                                                                                                                                                                             |
| 6 to 8 seconds.                                                  | No damage. Two clear distinct shocks at intervals of 3 to 4 seconds between the two shocks. Very marked, but not severe; not preceded by the usual rumbling noise.                                                                                                     |

| Date. | District. | Time of Occurrence. |
|-------|-----------|---------------------|
|-------|-----------|---------------------|

No reports received from Goálpára, Kámrúp, Nowgong, Sibságar,

June

4th June. | Nága Hills, Sámagúting. | 3:30 P. M.

No reports received from Goálpára, Kámrúp, Darrang, Nowgong,

|         |                        |                  |
|---------|------------------------|------------------|
| 7th do. | Khási Hills, Shillong. | 12:24 P. M.      |
| Do.     | Goálpára, Goálpára.    | 12:25 P. M.      |
| Do.     | Kámrúp, Barpetá.       | 12:25:5 s. P. M. |
| Do.     | Kámrúp, Gauháti.       | 12:30 P. M.      |

Ascertained that the shock was not felt in Darrang, Nowgong,

July

9th July. | Khási Hills, Shillong. | 1:15 A. M.

Ascertained that the shock was

10th July. | Kámrúp, Gauháti. | 1 A. M.

Ascertained that the shock was

August

|             |                   |             |
|-------------|-------------------|-------------|
| 3rd August. | Darrang, Tezpur.  | 12:30 P. M. |
| Do.         | Nowgong, Nowgong. | 2 P. M.     |

No reports received from Goálpára, Kámrúp, Sibságar,

August

|             |                        |             |
|-------------|------------------------|-------------|
| 6th August. | Khási Hills, Shillong. | 9:30 P. M.  |
| Do.         | Nowgong, Nowgong.      | 9:30 P. M.  |
| Do.         | Darrang, Tezpur.       | 10:30 P. M. |

Ascertained that the shock was not felt in Goálpára, Kámrúp,

|          |                        |            |
|----------|------------------------|------------|
| 17th do. | Khási Hills, Shillong. | 1 A. M.    |
| Do.      | Darrang, Tezpur.       | 1:30 A. M. |

Ascertained that the shock was not felt in Goálpára, Kámrúp,

|          |                   |            |
|----------|-------------------|------------|
| 21st do. | Goálpára, Dhúbri. | 5:50 P. M. |
| Do.      | Gáro Hills, Túrú. | 5:37 P. M. |

No reports received from Kámrúp, Darrang, Nowgong, Sibságar,

22nd do. | Khási Hills. | 4 P. M.

No reports received

|          |                        |            |
|----------|------------------------|------------|
| 25th do. | Nowgong.               | 9 P. M.    |
| Do.      | Khási Hills, Shillong. | 9:30 P. M. |
| Do.      | Darrang, Tezpur.       | 9:40 P. M. |



| Duration. | Extent of damage if any, and general remarks. |
|-----------|-----------------------------------------------|
|-----------|-----------------------------------------------|

Lakhimpur, Sylhet, Cachár, Nága Hills and Gáro Hills.

1877.

Very short. | Slight and unaccompanied by noise.

Sibságar, Lakhimpur, Sylhet, Cachár, Gáro Hills and Khási Hills.

5 seconds. | No damage.

1½ minutes. | Slight shock. No damage.

5 seconds. | No damage.

5 seconds. | Smart shock no damage.

Sibságar, Lakhimpur, Sylhet, Cachár, Nága and Gáro Hills.

1877.

3 seconds. | No damage.

not felt in any other district.

Very short. | Slight. No damage.

not felt in any other district.

1877.

6 to 8 seconds. | Slight, no damage, preceded by usual rumbling noise.

2 seconds. | Slight. No damage.

Lakhimpur, Sylhet, Cachár, Nága, Gáro and Khási Hills.

1877,—(continued).

5 seconds. | No damage.

2 seconds. | No damage.

A few seconds. | Distinct shock. No damage.

Sibságar, Lakhimpur, Sylhet, Cachár, Nága and Gáro Hills.

5 seconds. | No damage.

A few seconds. | Slight. No damage.

Nowgong, Sibságar, Lakhimpur, Sylhet, Cachár, Nága and Gáro Hills.

4 seconds. | Slight. No damage.

2 seconds. | Slight. No damage.

Lakhimpur, Sylhet, Cachár, Nága and Khási Hills.

2 seconds. No damage.

from other districts.

2 seconds. | Slight. No damage.

3 seconds. | No damage.

8 to 10 seconds. | No damage. Shock, clear, distinct and marked.

| Date.                                                             | District.              | Time of Occurrence. |
|-------------------------------------------------------------------|------------------------|---------------------|
| No reports received from Goálpára, Kámrúp, Sibságar,              |                        |                     |
| 30th August                                                       | Sibságar, Jorhát.      | 3.30 A. M.          |
| No reports received from Goálpára, Kámrúp, Darrang, Nowgong,      |                        |                     |
| September                                                         |                        |                     |
| 1st September.                                                    | Khási Hills, Shillong. | 5.30 A. M.          |
| Do.                                                               | Cachár.                | 5.45 A. M.          |
| 10th do.                                                          | Kámrúp, Gauháti.       | 11 P. M.            |
| Do.                                                               | Nowgong.               | 11 A. M.            |
| Do.                                                               | Darrang, Tezpur.       | 11.15 A. M.         |
| 16th do.                                                          | Sibságar, Jorhát.      | 7 A. M.             |
| Do.                                                               | Sibságar, Sibságar.    | 7 A. M.             |
| 18th do.                                                          | Nowgong, Nowgong.      | 10 A. M.            |
| Do.                                                               | Darrang, Tezpur.       | 10.30 A. M.         |
| Ascertained that the shocks were not felt at Goálpára, Lakhimpur, |                        |                     |
| October                                                           |                        |                     |
| 7th October.                                                      | Khási Hills, Shillong. | 5.30 A. M.          |
| 18th do.                                                          | Do.                    | 6.45 A. M.          |
| 30th do.                                                          | Darrang, Tezpur.       | 11.30 P. M.         |
| November                                                          |                        |                     |
| Nil.                                                              |                        |                     |
| December                                                          |                        |                     |
| 1st December.                                                     | Darrang, Tezpur.       | 6.10 A. M.          |
| Ascertained that this shock was                                   |                        |                     |
| 7th do.                                                           | Sibságar Jorhát.       | 12 P. M.            |
| Do.                                                               | Goálpára, Goálpára.    | 1.25 A. M.          |
| Do.                                                               | Nowgong, Nowgong.      | 1.30 A. M.          |
| Do.                                                               | Darrang, Tezpur.       | 1.30 A. M.          |
| Do.                                                               | Sibságar, Sibságar.    | About 2 A. M.       |
| Do.                                                               | Gauháti, (Kámrúp).     | Do.                 |

| Duration.                                                      | Extent of damage if any, and general remarks.                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nowgong, Lakhimpur, Sylhet, Cachár, Nágá and Gáro Hills.       |                                                                                                                                                                                                                                                                                                                                                                                           |
| About 5 seconds. \| No damage. Slight trembling shock.          |                                                                                                                                                                                                                                                                                                                                                                                           |
| Lakhimpur, Sylhet, Cachár, Nágá, Khási and Gáro Hills.         |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1877.                                                          |                                                                                                                                                                                                                                                                                                                                                                                           |
| 5 seconds.                                                     | No damage.                                                                                                                                                                                                                                                                                                                                                                                |
| 7 seconds.                                                     | Slight shock.                                                                                                                                                                                                                                                                                                                                                                             |
| 1 min. 10 sec.                                                 | No damage.                                                                                                                                                                                                                                                                                                                                                                                |
| 2 seconds.                                                     | Very slight shock. No damage.                                                                                                                                                                                                                                                                                                                                                             |
| 8 to 10 seconds.                                               | Sudden and distinct shock not preceded by usual rumbling noise. No damage.                                                                                                                                                                                                                                                                                                                |
| 2 seconds.                                                     | No damage. The sensation was as of one shock upwards.                                                                                                                                                                                                                                                                                                                                     |
| Less than a sec.                                               | Nil.                                                                                                                                                                                                                                                                                                                                                                                      |
| 10 seconds.                                                    | No damage. One sharp shock preceded by a heavy rumbling noise.                                                                                                                                                                                                                                                                                                                            |
| 8 to 12 seconds.                                               | Slight shock, but the usual rumbling noise was loud and long.                                                                                                                                                                                                                                                                                                                             |
| Sylhet, Nágá and Gáro Hills on the 10th, 16th and 18th.        |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1877.                                                          |                                                                                                                                                                                                                                                                                                                                                                                           |
| 10 seconds.                                                    | No damage.                                                                                                                                                                                                                                                                                                                                                                                |
| 15 seconds.                                                    | No damage.                                                                                                                                                                                                                                                                                                                                                                                |
| 20 to 25 seconds.                                              | No damage. Sharp shock.                                                                                                                                                                                                                                                                                                                                                                   |
| 1877.                                                          |                                                                                                                                                                                                                                                                                                                                                                                           |
| 1877.                                                          |                                                                                                                                                                                                                                                                                                                                                                                           |
| A few secs. only. \| Two distinct but slight shocks. No damage. |                                                                                                                                                                                                                                                                                                                                                                                           |
| not felt in any other district.                                |                                                                                                                                                                                                                                                                                                                                                                                           |
| (?)                                                            | No damage.                                                                                                                                                                                                                                                                                                                                                                                |
| 5 seconds.                                                     | Slight shock.                                                                                                                                                                                                                                                                                                                                                                             |
| 4 seconds.                                                     | Do. No damage done.                                                                                                                                                                                                                                                                                                                                                                       |
| A full 20 seconds.                                             | Very severe, about half a dozen distinct shocks, the second one very strong and caused much damage. South wall of kutcherry cracked and broken down. Northern walls cracked. Treasury walls cracked in several places. Circuit bungalow walls much cracked. Jail uninjured. Deputy Commissioner's bungalow on the hill suffered most, chimney fell in, causing loss of valuable property. |
| Less than a sec.                                               | Nil.                                                                                                                                                                                                                                                                                                                                                                                      |
| 5 seconds.                                                     | A slight shock accompanied by the usual rumbling noise. No damage.                                                                                                                                                                                                                                                                                                                        |

| Date.         | District.              | Time of Occurrence. |
|---------------|------------------------|---------------------|
| 7th December. | Barpetá, (Kámrúp).     | 2.10 A. M.          |
| Do.           | Khási Hills, Shillong. | 2 A. M.             |
| Do.           | N. Lakhimpur.          | 2.35 A. M.          |

Ascertained that this shock was not felt in Cachár,

|               |                        |             |
|---------------|------------------------|-------------|
| 9th December. | Darrang, Tezpur.       | 12.30 P. M. |
|               |                        | 3 P. M.     |
|               |                        | 8.50 P. M.  |
| Do.           | Khási Hills, Shillong. | 1.45 A. M.  |

Ascertained that this shock was not felt at Goálpára, Kámrúp,

|                |                   |             |
|----------------|-------------------|-------------|
| 11th December. | Darrang, Tezpur.  | 11.30 P. M. |
| Do.            | Nowgong, Nowgong. | 1 A. M.     |

Ascertained that the shock was not felt in Goálpára, Kámrúp,

|                |                        |            |
|----------------|------------------------|------------|
| 18th December. | Kámrúp, Gauhati.       | 3.35 P. M. |
| Do.            | Darrang, Tezpur.       | 3.45 P. M. |
|                |                        | 4.20 P. M. |
|                |                        | 5.15 P. M. |
| Do.            | Khási Hills, Shillong. | 3.47 P. M. |
| Do.            | Nowgong, Nowgong.      | 3.50 P. M. |

Ascertained that the shock was not felt in Goálpára, Sibságar,

|                |                        |             |
|----------------|------------------------|-------------|
| 22nd December. | Darrang, Tezpur.       | 4 A. M.     |
| Do.            | Khási Hills, Shillong. | 10.30 P. M. |

Ascertained that the shock was not felt in Goálpára, Kámrúp, Nowgong,

|                |                        |          |
|----------------|------------------------|----------|
| 29th December. | Khási Hills, Shillong. | 9 P. M.  |
| Do.            | Cachár, Silchár.       | 10 P. M. |
| Do.            | Goálpára, Goálpára.    | 11 P. M. |

Ascertained that the shock was not felt in Kámrúp, Darrang,

| Duration.   | Extent of damage, if any, and general remarks.              |
|-------------|-------------------------------------------------------------|
| Not stated. | Nil.                                                        |
| 10 seconds. | No damage done.                                             |
| 2 seconds.  | Treasury room cracked in several places. No serious damage. |

Sylhet, Gáro and Nágá Hills and Head Quarters Lakhimpur.

|                  |                                                                                                                                          |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 8 to 10 seconds. | The first two shocks very distinct. No damage. The third shock was very smart, and the rumble and shock came almost together. No damage. |
| A few seconds.   |                                                                                                                                          |
| 8 seconds.       |                                                                                                                                          |
| 5 seconds.       |                                                                                                                                          |

Nowgong, Sibságar, Lakhimpur, Sylhet, Cachár, Nágá and Gáro Hills.

|             |                         |
|-------------|-------------------------|
| 10 seconds. | Smart shock. No damage. |
| 3 seconds.  | Very slight. No damage. |

Sibságar, Lakhimpur, Sylhet, Cachár, Nágá, Gáro and Khási Hills.

|                   |                                                   |
|-------------------|---------------------------------------------------|
| 5 seconds.        | Slight. No damage.                                |
| 10 seconds.       | 1st, very distinct with loud rumbling. No damage. |
| A few seconds.    | 2nd, slight rumbling, distinct, but no shock.     |
| 15 to 20 seconds. | 3rd, loud continued rumbling, no shock.           |
| 5 seconds.        | No damage.                                        |
| 2 seconds.        | Sharp shock, no damage.                           |

Lakhimpur, Sylhet, Cachár, Nágá and Gáro Hills.

|                  |                                               |
|------------------|-----------------------------------------------|
| 8 to 10 seconds. | Distinct shock with loud rumbling. No damage. |
| 5 seconds.       |                                               |

Sibságar, Lakhimpur, Sylhet, Cachár, Nágá and Gáro Hills.

|            |               |
|------------|---------------|
| 5 seconds. | No damage.    |
| 2 seconds. | Very slight.  |
| 5 seconds. | Slight shock. |

Nowgong, Sibságar, Lakhimpur, Sylhet, Nágá and Gáro Hills.

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IV.—*Sixth List of Birds from the Hill Ranges of the North-East Frontier of India.*—By LIEUT.-COLONEL H. H. GODWIN-AUSTEN, F. Z. S. &c., &c., late Deputy Superintendent Topographical Survey of India.

(Received 16th March; read 3rd April.)

[With Plates X and XI.]

This list is the result of two seasons' Survey exploration in the Eastern Nágá Hills (Mr. A. W. Chennell) and of the low hills near Sadiya and the neighbourhood of the Bráhmakhúnd (Mr. M. T. Ogle). I have again to acknowledge the kind services of the above gentlemen, to whom I owe so much, and who have added considerably to the value of the collection by taking careful measurements in the flesh and recording the colour of the soft parts. The collection is a large one and contains, as will be seen, besides a large number of species already recorded, many interesting birds. Together with the birds included in my paper on the Daffa Hills and Darrang Terai, which I have now introduced and marked with an asterisk, it brings up the total number of species collected during the progress of No. 6 Topographical Survey to 585.

Having now left the service, I much fear that this will be my last contribution in these pages to the avi-fauna of the Eastern Districts. The assistants who have been associated with me hitherto on this pleasant work are being gradually reduced in number; and have either been transferred to other parties, or have proceeded on well merited leave of absence to a distance, so that it is difficult to arrange for collecting with success, and a certain amount of aid is requisite, which only individuals in the country can obtain. When this paper was almost completed, the arrival of Mr. Chennell in England, with another collection of some 800 skins from the North Khási Hills, has enabled me to add a few more species to the list, and there are still some I have not yet identified.

70. URRUA COROMANDA, Latham.

North Khási Hills, (collected by Mr. Chennell).

*71. HUHUA NIPALENSIS, Hodgson.

73. KETUPA FLAVIPES, Hodgson, var. *magnifica*, Swinhoe.

North Khási Hills. The specimen in Mr. Chennell's collection has the tarsus covered with a white down, buffy above, extending to within 1·3 inch of the base of the toes, as recorded by Mr. Swinhoe in his description of *K. magnifica* from Ningpo, (Ibis, 1873, p. 127).

On Mr. Chennell's label I find the following notes :

L. 21 inches, W. 16·5, T. 6·0, t. 3·0, Bf. 1·8. Bill greenish horny, irides golden yellow. Legs and feet dusky grey. The mid toe is 1·75, its claw 1·1, hind toe 1·0, claw 1·25.

These dimensions and the coloration of the feet and legs are much nearer to those of Mr. Swinhoe's bird than to those given by either Sharpe or Jerdon for *flavipes*. In neither of the latter is any mention made of the down covered tarsus, a character so striking that it could hardly have escaped their notice, and one which, besides the vermiculated breast and lower parts, distinguishes the species from *Ceylonensis*.

Swinhoe concludes with the remark that the fine down of the tarsus appears to wear off, but the specimen now recorded is an adult, and though this down may disappear to a certain extent, I do not think the tarsus and the joint above would ever become bare as in *Ceylonensis* and *flavipes*.

*94. CHELIDON NIPALENSIS, Hodgson.

106. BATRACHOSTOMUS JAVENSIS, Horsfield, ♀ ?

This specimen belongs to the Indian Museum, Calcutta, where I found it among some skins that had been sent down by the late lamented Captain John Butler from the Nágá Hills, and I was by the kind permission of the Trustees allowed to bring it to England. It is a most interesting specimen in the rufous phase of plumage, but unfortunately the sex is not marked. It agrees with a specimen of *B. Javensis* ♀ in the collection of Lord Tweeddale, and the description of the species as given in P. Z. S. 1877, p. 435, and the dimensions do not differ materially. I give a description of the Nágá Hill bird, interesting as being found so far to the northward.

Entire plumage rich chestnut brown, a few white feathers at the base of the upper mandible tipped rufous and barred with black. White on chin and throat, some of the feathers on the latter crossed by a V-shaped dark line, but they only extend to the upper breast, this being covered by feathers having large, rounded white centres, bounded on the terminal margin by a narrow dark line and fringed with chestnut; towards the abdomen and flanks the white marks become narrow and lengthened. The wing is unspotted, but conspicuous white feathers margined with black are mingled with the scapulars, and there is a well-marked nuchal collar, each feather crossed by a narrow black line edged terminally by another. There is a slight mottling of dull black on the primaries and secondaries and lower back. The tail is similarly mottled and crossed by 7 pale clear rufous bands, the outer penultimate tail feather has 5 distinct white bars on the outer web, the very short outermost feather has a terminal whitish spot.

W. 5·25 inches, T. 5·5, t. 0·6, Bf. 0·6. Breadth at gape, 1·05, mid-toe and claw 0·75. The long frontal plumes are black, rufous at the base.

This bird is, I think, nearest to *B. Javensis*, *B. affinis* apparently not having any white in front of the eye.

On my submitting this paper and the specimen to Lord Tweeddale he thus wrote to me,—“This Nágá Hill example of the genus, *Batrachostomus* “without doubt belongs to the *B. Javensis* (Horsf. ex Java). I have critically compared the two and cannot detect any difference. It may turn out to be Mr. Hume’s *B. castaneus*, in which case *B. Hodgsoni* will become a synonym of *B. Javensis*. It is a large form of *B. affinis*, but the “white on the throat seems to extend higher up, as it does in the Javan “species and in *B. cornutus* of Sumatra and Borneo.” Lord Tweeddale does not concur with me regarding the white mark in front of the eye, and says, “it is just as strongly marked in my examples of *B. affinis*.”

130. HALCYON PILEATA, Bodd.

H. atricapillus, Gmel.—Jerdon, Birds of India, Vol. I, p. 226.

♂ L. about 10·3, W. 4·9, T. 4·0, t. 0·58, Bf. 2·3, Bill from nostril 2·15.

The dimensions of the length and wing are much smaller than those given by Dr. Jerdon.

133. CEYX TRIDACTYLA, Pallas.

Dr. Jerdon informed me that he saw this species in a small stream close under the village of Cherra Púnji, but as I never got it myself, I did not record it. Mr. A. W. Chennell has two specimens he shot on the Umthunna River, N. Khási Hills.

*135a. ALCEDO GRANDIS, Blyth.

Also got on the Buri Dihing.

*137. CERYLE GUTTATA, Vigors.

Tenga Páni and Buri Dihing.

147. PALÆORNIS EUPATRIUS, Lin.

L. 21, W. 8·1, T. 13·5, t. 0·8, Bf. 1·5, Bg. 1·2.

Bill deep red. Legs and feet orange yellow.

N. Khási Hills, December, (Chennell).

*152a. PALÆORNIS MELANORHYNCHUS, Wagler.

*171. GECINUS STRIOLATUS, Blyth.

210. SURNICULUS DICRUROIDES, Hodgson.

Mr. Chennell has two specimens from the N. Khási Hills of this curiously plumaged bird, so like the king-crow.

Length 10·0, W. 5·5, T. 5·75, t. 0·7, Bf. 0·8.

*245. *CERTHIA DISCOLOR*, Blyth.

*308. *CYORNIS UNICOLOR*, Blyth.

313. *NITIDULA HODGSONI*, Moore.

A single male specimen was collected for me by Mr. A. Chennell in the Nágá Hills; this is of a richer chestnut below than a specimen from Darjiling. A female was obtained by Mr. Ogle at Sadiya. I give a description of the latter, that in Jerdon being taken from the male.

♀. Above, olivaceous brown, wings and tail dark umber-brown, beneath, all pale rufous buff. Under tail coverts white.

W. 1·75, t. 0·65. The wing is rather shorter than in the male which has it 1·90.

320. *SIPHIA LEUCOMELANURA*, Hodgson.

I now possess two males and three females from Sadiya, two males from the Muni-pur Hills, and one male from Sibságar, Assam. Dr. Jerdon only describes the male, the female apparently was unknown to him. I therefore give one of a specimen sent me from Darjiling by Mr. L. Mandelli.

♀. Above, brown with an olive cast, darkest on the head, ochraceous on the rump. Wing and tail ruddy brown, ferruginous at the base of the tail feathers and on the wing coverts. Beneath, dingy sordid white, purer on the centre of the abdomen, ochraceous on the flanks. Hind claw well curved. W. 2·3, T. 2·05, t. 0·72, Bf. 0·36.

♂. Sadiya, W. 2·4, T. 2·15, t. 0·85, Bf. 0·30 to 0·35.

Legs, sepia-brown; irides deep brown.

377. *CHLUVASICUS RUFICEPS*, Blyth, var. *atrosuperciliaris*, Godwin-

Austen. P. A. S. B., June 1877, p. 147.

♂. Rusty chestnut on the head, same colour, but paler, on the nape and ear coverts: back and wings pale olive-brown, quills tinged rufous, tail brown. A narrow black streak over the eye, beneath dull white with an earthy tinge.

Legs dark plumbeous.

L. about 6, W. 2·85, T. 3·3, t. 0·90, Bf. 0·43.

Maubum Tila, near Sadiya.

Larger than typical *C. ruficeps* and not so white below.

*378b. *SUTHORA DAFLAENSIS*, Godwin-Austen.

*382. *GRAMMATOPTILA STRIATA*, Vigora.

390c. *TURDINUS NAGAENSIS*, Godwin-Austen, [A. M. N. H., Dec. 1877.]

"Above, rich umber-brown throughout with no streaking on the feathers of the head. Beneath, the same tint, much paler, with slight rusty shading into and adjacent to the dull whitish centre of the breast, chin also whitish.

"Irides dark brown, legs and feet light sienna-grey.

"Length about 5·70, wing 2·2, tail 2·2, t. 0·90, Bf. 0·50, hind toe, 0·35, claw 0·3. This species is very distinct from *T. Garoensis* in its deeper umber coloration and smaller size. Particularly is this the case in the legs, feet and hind claw.

"It was obtained by Mr. A. W. Chennell, of the Survey, in the Eastern Nágá Hills."

390d. *TURDINUS STRIATUS*, Walden.

I have compared a specimen from Sadiya of the bird hitherto considered as *T. brevicaudatus* with the type in the Calcutta Museum, obtained by Col. Tickell in Tenasserim, and find that they are, after all, distinct. The Tenasserim form is very strong rufous on the breast, belly and under tail-coverts, the spots on the secondaries are small and triangular, whereas in that from Sadiya they are large and tip the feather. The throat is also grayer in this last. In the "Ibis" for 1876, p. 354, Lord Tweeddale remarks on the highly colored drawing by Tickell of *T. brevicaudatus*, and Mr. Gould has very probably figured an Assam bird, which should stand properly under the title of *T. striatus*, Walden, described in Ann. Mag. Nat. Hist., (4), vii., p. 241, and which Jerdon had very probably compared with true *brevicaudatus* from the Burmah side and considered distinct. This bird is the one I refer to under the title of *T. Williamsoni* in J. A. S. B., Pt. II., 1877, p. 44. I have four specimens from Sadiya (Gáro Hills and Munipur), in all of which the spots on the secondaries are rufous, while in a specimen from the Mulé-it range, Tenasserim, obtained by Mr. Limborg, they are white, thus agreeing with Col. Tickell's drawing of true *brevicaudatus* from the same locality. This specimen is again not so rufous as the type in the Indian Museum, but this is a very variable character in this group, (as may be seen in *Pnoe. squamata*, of which specimens white beneath are often met with,) and probably depends on age. After all *striatus* is only a variety of *brevicaudatus*.

399b. *PELLORNEUM MANDELLII*, W. Blanford, [J. A. S. B., vol. XLI, Pt. II, p. 165, pl. VII., (1872).]

Var. *pectoralis*.

I described this variety of the Darjiling form in the J. A. S. B. vol. XLVI, Pt. II, 1877, pp. 41-42, as it differs a good deal in its markings

from *P. Mandellii* described by W. Blanford from Darjiling, and is the form which extends to the Gáro, Khási and North Cachár Hills, *P. ruficeps* of my First List, [J. A. S. B., Vol. XXXIX, p. 103, (1870).]

Jeidon, when noticing a new species from the Khási Hills, in Vol. II., Birds of India, had *Pel. palustre* in mind.

*401. POMATORHINUS FERRUGINOSUS, Blyth.

405c. POMATORHINUS STENORHYNCHUS, G.-A.

The original description appeared in this Journal, Pt. II., Vol. XLVI. p. 43, (1877), and I have only to add that its nearest ally is *P. ochraceiceps*, Walden, from Burmah; but the above species is larger and has the lower parts pale ferruginous, whilst in *ochraceiceps* they are of the purest white, and it is not so rufous on the head and nape. The legs of *stenorhynchus* are horny grey; in the figure of *ochraceiceps* lately published in the Ibis for 1877, Pl. XIII, the legs appear to be much too blue; should this coloring however be correct, it will mark another point of difference.

Mr. Ogle shot this species on Manbúm Tila, at an elevation of 8,000 feet, not far from Sadiya.

407a. GARRULAX NUCHALIS, Godwin-Austen. Plate X.

The second specimen of this bird was obtained again by Mr. Ogle, on the Kamlangpáni, at 500 ft. I described the first example, obtained also by Mr. Ogle, in the Annals and Magazine of Natural History for November 1876, and I here repeat the original description and remarks upon it. It is figured on the accompanying plate.

"Above, top of head to nape dark slaty grey, succeeded by a broad rich ferruginous collar an inch in breadth, which fades into the olive-green of the back. Wings and tail of a rather darker tint of olive, the latter tipped black; the first four primaries are tipped hoary-grey; the shoulder of wing has a rusty tinge. A narrow frontal band; the lores, with a narrow line over and below the eye, black; this is continued in a streak of dark rusty brown over the ear-coverts; a few white feathers border the black frontal band above. Chin black, extending a short way down the middle of throat; breast pale ashy, with a slight vinous tinge. Cheeks and ear-coverts pure white. Flanks and under tail-coverts dull olive-green. Bill black. Irides purple-lake. Legs fleshy-grey.

"Length 10 inches, wing 4·25, tail 4·6, tarsus 1·7, bill at front 0·9.

"This beautiful species was among a batch of birds lately received from and collected by Mr. M. T. Ogle, of the Topographical Survey, in the Lhota-Nágá hills. It is the representative there of *G. chinensis*, but differs in possessing the broad ferruginous nape, and the neutral grey of the head is of a darker hue. In other respects it is identical, save in some

minor points, such as :—the black of the throat does not extend so far down on to the upper breast ; the lower breast is paler than in *chinensis*, and has a vinous tinge ; the under tail-coverts are pure olivaceous with no ochraceous tint ; and, lastly, the white of the cheek and ear-coverts extends in this new form further down the side of the neck.”

*427b. *ACTINURA DAFLAENSIS*, Godwin-Austen. [Pl. IV, J. A. S. B., 1876.]

497d. *ACTINURA OGLEI*, Godwin-Austen. Plate XL.

This beautiful new form, discovered by Mr. M. T. Ogle, was described in J. A. S. B., Vol. XLVI, Pt. II, 1877, p. 42, from Manbúm Tila on the Tengapáni River, near Sadiya. It is now figured.

*430. *SIBIA PICAOIDES*, Hodgson.

*432. *MALACOCERCUS TERRICOLOR*, Hodgson.

*498. *RUTICILLA HODGSONI*, Moore.

*534. *PRINIA SOCIALIS*, Sykes, small variety.

*535. *PRINIA STEWARTI*, Blyth.

562a. *PHYLLOSCOPUS FULIGINIVENTER*, Hodgson, sp.

Horornis fuliginiventer, Jerdon. [Birds of India, Vol. II, p. 162, No. 525.]

A dull but well marked ring round the eyes, an indistinct supercilium of same colour as the breast. All above very dusky bistre-brown with an olive tinge. Beneath dingy oil-green, paler on chin ; under tail-coverts rather lengthened. Irides dull brown, legs ochraceous green. Obtained at Sadiya.

L. 4.25, W. 2.15, T. 2.0, t. 0.87, Bf. 0.34.

564. *REGULOIDES TROCHILOIDES*, Sundeval.

♂ from Noa Dihing, March 6th. Compared with specimens in British Museum.

Lord Tweeddale writes—“ Has your specimen got white margins to the outer tail feathers ? If it has so, it will be true *P. viridipennis*, and which is probably nothing but *P. presbytes* of S. Müller. Seebohm thinks that *P. trochiloides*, *viridipennis*, and *presbytes* are one and the same.”*

576. *ABORNIS AFFINIS*, Hodgson.

This bird I have only received from the Nága Hills ; it has a bright yellow ring round the eye.

* Compare Stray Feathers, V, 1877, pp. 330, 504.—Ed.

572. *ABROENIS FLAVIGULARIS*, n sp.

Description : Above ash grey, purer grey on rump, rather darker on the head. Wings pale umber-brown. Tail ash-brown, the two outer feathers white on the inner web, the next with a narrow edging of white. Lores white, ear-coverts white and grey. Chin pure yellow fading on throat; breast, nape, flank and thighs greyish white, whitish on the breast; a very faint yellow tinge on the abdomen; under tail-coverts white. A small patch of yellow on inner shoulder of the wing,

Bill dark above, buff below.

W. 1·84, T. 1·8, t. 0·67, Bf. 0·8.

Hab.—Sadiya. (Mr. Ogle.)

Having failed to identify this bird with any species I have examined, I have now described it more fully; it is the specimen I noted as probably new under the above title in the J. A. S. B., Vol. XLVI, Pt. II, p. 44, (1877).

It is nearest to *A. xanthoschistus*, having the same coloured head and form of bill, but its entire ashy upper surface distinguishes it well from all the species I am acquainted with.

*586. *HENICURUS SCHISTACEUS*, Hodgson.*587. *HENICURUS SCOULERI*, Vigors.*588. *HENICURUS SINENSIS*, Gould.*590a. *MOTACILLA HODGSONI*, G. K. Gray.*592. *CALOBATES MELANOPE*, Pallas.594. *BUDYTES CITREOLA*, Pallas.

♀. Pengapáni, W. Sadiya. April 24th.

The black band on the nape is hardly developed at all.

594a. *BUDYTES CITREOLOIDES*, Hodgson.

♀. Brahmaputra. April 5th.

The white of the wing has a slight wash of yellow on it.

*612. *CUTIA NIPALENSIS*, Hodgson.*621. *PROPARUS CHRYSEUS*, Hodgson.625a. *STAPHIDEA PLUMBEICEPS*, Godwin-Austen.

Ann. Mag. Nat. Hist., Dec. 1877.

Original Description : "Head (sub-crested) ash-grey, purer behind; feathers narrowly edged paler. Back pale olive-brown, a few feathers

pale-shafted. Wings umber-brown. Tail darker, the four outer feathers tipped with white, increasing outwards diagonally. Lores pale grey. The ear-coverts only to just beneath the eye chestnut, the feathers white-shafted. Chin, throat, and all the lower parts white. Flanks pale sepia-grey; under tail-coverts the same, tipped white.

"Irides reddish brown. Legs umber.

"Length 4·6 inches, wing 2·3, tail 9·05, tarsus 0·7, bill at front 0·3.—
Obtained near Sadiya and Brahmakhúnd."

A near ally is *Staphidea castaneiceps*, Moore, very common in the Khási and Nágá Hills, while another very distinct species is *Staphidea torquola*, Swin.; but in this last the chestnut commences at the base of the lower mandible, passes under the eye and round the nape in a broad band of chestnut-brown, and the last three tertiaries are margined white on the inner web. This is absent in the Assam species.

In my note-book I find that I obtained one example in the Dikrang valley, Dafia hills, which I shot at camp No. 9; but this was subsequently lost somehow or other, and therefore I did not insert it in the List of Birds from the Dafia Hills, published in the Society's Journal.

Can this be *Ixulus striatus*, Blyth? Blanford in J. A. S. B., 1872, p. 166, says the Darjiling bird is the same as the Tenasserim type in the Calcutta Museum, but mentions that it has a rufous supercilium, which none of my specimens possess.

[Since writing the above, I have received from Mr. W. Blanford, in a letter from Calcutta in reply to some questions I wrote to him regarding this species, *Ix. striatus*, some remarks which I now quote. "I have two specimens of the Sikkim bird; I have re-compared them with the type from Tenasserim, and I cannot understand how I can have identified the two. The Tenasserim bird is, as Blyth describes it, greyish brown (ashy brown according to Tickell), the cap may have been a trifle darker, but very little, not so distinct I should say as in the Sikkim bird, and the white shafts are far more conspicuous in the Tenasserim type. Above all, the bill is much larger in the latter; the difference is so marked that I think I must have compared a Sikkim specimen differing from those I have now. The cheek patch is distinct but faint. In the specimen from Sikkim, (*Ix. rufigenis*, Hume) which I now have, the rufous supercilium is only indicated posteriorly." This last title was given to the Sikkim bird by Mr. A. O. Hume in Stray Feathers, Vol. V, p. 108. Mr. Blanford has now followed up his letter by sending me two specimens from Mr. Mandelli's collection of this Darjiling form, and on comparison I find that it is quite distinct from *plumbeiceps*. This last has the head of a decided ash-grey colour, and the feathers are more lengthened behind, so as to give a sub-crested appearance. Bill shorter and deeper. Legs stouter, altogether a larger bird. In one

specimen from Darjiling, there is an extension shewn of the rufous of the ear-coverts round the nape, of which there is not a trace in the Sadiya examples. These are the dimensions of *rufigenis*. W. 2.45, T. 0.6, Bf. 0.47.

The wings run about equal. This genus presents us with an interesting example of modification of plumage in areas that are in a great measure separated now physically. We appear to have 5 forms:—

1. *Staphidea castaneiceps*, Moore, (1854). Gáro, Khási and Nága Hills.
2. „ *striatus*, Blyth, (1859). Tenasserim.
3. „ *rufigenis*, Hume. Sikkim Hills.
4. „ *plumbeiceps*, Godwin-Austen. Sadiya, Eastern Assam.
5. „ *torqueola*, Swinhoe. W. China.]

669. *GARRULUS BISPECULARIS*, Vigors.

This Himalayan Jay was obtained by Mr. Chennell at Shillong, and is in his collection.

*838. *SYPHEOTIDES BENGALENSIS*, Gmelin.

878. *RHYNCHÆA BENGALENSIS*, Linnæus.

North Khási Hills. Mr. Chennell.

In the neighbourhood of Calcutta these birds breed as early as March and April; two chicks were brought to me about the middle of the former month.

879. *IBIDORHYNCHUS STREUTHERSII*, Vigors.

♂. Noa Dihing.

W. 9.25, T. 5.5, t. 1.7, Bf. 3.02.

907a. *PODICA PERSONATA*, G. R. Gray.

This bird, hitherto only recorded, on the Indian side, from Cachár, was found by Mr. Ogle on the Noa Dihing river near Sadiya; the specimen is a male, and has been compared with those in the Indian Museum from Tenasserim.

W. 9.5, T. 5.4, t. 2.0, Bf. 2.15, bill to nares 1.05.

908. *PORZANA AKOOL*, Sykes.

In Mr. Chennell's collection from North Khási Hills.

Length about 9.25, W. 4.4, T. 2.3, t. 1.8, Bf. 1.0.

Bill dusky green, yellow below, irides red brown, legs and feet dusky lake.

910. *PORZANA PYGMÆA*, Naumaun.

Near base of the Hills. N. Khási. Obtained by Mr. Chennell.

985a. *GORSACHIUS MELANOLOPHUS*, Raffles.

Dipur Bhil. Eastern Assam, March, (Chennell).

The discovery of this interesting bird in this part of India is noteworthy, as I do not believe it has hitherto been obtained any where in India, certainly never recorded. Up to the present it has been only known as a native of Japan, Sumatra, Philippines, Arrakan (Ramri Island), Ceylon and the Nicobars (Hume). The specimen, a male, agrees well with Mr. A. O. Hume's excellent description from the last-named locality in "Stray Feathers, Vol. II, p. 313." Mr. Chennell's dimensions in the flesh are "wing 10·7, tail 5, tarsus 8·0, bill at front 1·9. Bill dark horny;" these I have checked and find correct, the wing I make exactly 11·0. The tarsus of the Nicobar bird appears to be very much shorter than in Schlegel's description and in this specimen from Assam.

950. *SARCIDIORNIS MELANONOTUS*, Pennant.

There is a head of this species in Mr. Chennell's collection from Upper Assam.

*981. *LARUS RIDIBUNDUS*, Linn.

*987. *STERNA MELANOGASTRA*, Temminck.

Notes on Species recorded in former Lists.

79. *ATHENE CUCULOIDES*.

Mr. Chennell writes me an interesting account connected with the habits of this bird "One evening last January while in search of *Polyplectron*, several of which were calling about my camp at Gorhanga, I came upon two birds struggling desperately on the ground. I shot both, one "turned out to be an owl, *Athene cuculoides* ♀ and the other a thrush "*Myiophonus temminckii* ♂. The little owl had so furiously attacked the "thrush that even in death its strong talons were firmly fixed in the "victim's back."

157. *PICUS MACUL.*

In the colour of the ear-coverts there is, I find, very great variance from pure white to pale earthy brown; they are white in a female from Sadiya.

311. *MUSCICAPULA ESTIGMA*.

The young bird is dull umber-brown above, the feathers tipped pale rufous and edged darkly, giving it a very speckly appearance. Upper tail coverts rufous umber. Secondary coverts forming a narrow wing bar, 3 last secondaries edged in the same way. Beneath white, some of the feathers tipped dark brown. Wings and tail ashy umber-brown.

From Shillong Peak. July, (ex coll. Chennell.)

816. *NILTAVA GRANDIS*.

I have a specimen of this species in its young plumage which is worth description.

Above, brown with a rufous shade, the feathers of the head shafted ferruginous, those of the wing coverts, lower back and rump broadly tipped with the same colour and edged black. Tail dark chestnut brown, wings umber-brown. Beneath, breast ferruginous brown with some dusky edgings, giving a slightly barred appearance, paling to whitish on abdomen.

830. *PNOEFGA PUSILLA*, var.

A specimen in Mr. Chennell's collection is in a very interesting stage of plumage. It is uniform brown, the feathers not so scale-like as usual, only a very few of the feathers on the lower back having terminal spots to them; in size and form of bill it is the same as the type. I was at first inclined to consider it distinct, but it is better to wait until we see more similar specimens before naming it, for it appears immature. The wings are rusty umber-brown, chin pale, breast and belly ashy umber with no bars or markings.

W. 1.8, T. very short, t. 0.7, Bf. 9.43.

From the N. Khási Hills.

846. *PITTA CUCULLATA*, Hartlaub.

I have seen a specimen in Mr. Chennell's collection which he obtained in the N. Khási Hills, and he only saw one other. I have already alluded to the apparent rarity of the species in these Hills.

386a. *PYCTORHIS ALTIROSTRIS*, Jerdon.

= *griseigularis*, Hume.

I observe that Mr. Hume is still of opinion that his Bhútán Duár bird is distinct from *altirostris*, and in Stray Feathers, Vol. V, No. 2, p. 116, he has named it *griseigularis* (relying on Dr. Jerdon's description being correct). Had Mr. Hume looked up the "Fifth List of Birds from the N. E. Frontier," J. A. S. B., Vol. XLV, Pt. II, p. 197, he would have seen that after the intimation of the re-discovery of the species (Ann. Mag. Nat. Hist., Jany. 1876) the type of *altirostris* turned up in the British Museum, and that my specimens had been compared with it, leaving no doubt in my mind that they are identical, both in plumage and bill. Mr. Hume's specimens and my own, moreover, come from the same line of country, the great plain north of the Brahmaputra. Dr. Jerdon's description is short, but applies very fairly in every way, save in respect to the bill, which is deeper than in *Sinensis*. Jerdon says "making an approach to *Paradoxornis*," by this he may have intended to convey only a very slight approach. The following appear to be the principal differences in the description of the plumage.

Above "slightly brownish ferruginous," Hume, Vol. V, or "rather dark ferruginous brown," Hume, Vol. IV. = "pale reddish brown," Jerdon.

Beneath "dull rusty," Hume, Vol. V, or "Brownish buff deeper coloured &c.," Hume, Vol. IV, = "pale fulvescent," Jerdon.

Under wing-coverts "pale yellowish fawn," Hume, Vol. V, = "pale ferruginous," Jerdon.

When such distinctions as these are made the basis on which to found new species, it is I think advisable to wait, and if possible compare with the type. But in *altirostris* we have one very marked character which Dr. Jerdon did not overlook, *viz.*, "forehead and streak over the eye hoary grey." No two men agree in describing various shades of brown, olive-green &c., an important element being the kind of light the skins are placed in, and individual sensitiveness to colour. It is satisfactory to know that the type of *altirostris* has been found, otherwise we should have been left in a cloud of doubt regarding even its very existence, for in *Stray Feathers*, Vol. III, p. 116, an idea is thrown out that Dr. Jerdon had got hold of a variety of *Pyctorhis sinensis* when he was at Thyet-Myo. Even had the type of *altirostris* been lost, I hold it would have been better to consider it as re-discovered in Assam, and then have waited for it to turn up again on the Irrawady (where I am sure it will be found*) before giving the Assam bird a new title.

427c. *ACTINURA EGERTONI*, Gould. Var. *Khasiana*, Godwin-Austen.

This is referred to in my list of Dafia Hill Birds and is the species noted as near *Egertoni* in my First List.

437a. *MALACOCERCUS (LAYARDIA) ROBIGINOSUS*, Godwin-Austen, described in J. A. S. B., 1874, p. 164, is the *Pyctorhis longirostris*, Hodgson, of Moore's Catalogue of Birds in the Indian Museum. I have compared my specimens with the type and only observe that those from Eastern Assam are larger. I was misled into describing it under a new name by a specimen which is only a slight variety of *Pyc. sinensis*, labelled wrongly *P. longirostris*, in the British Museum. At the time I described *M. robiginosus* the Indian Museum birds were still packed away and not to be got at, and I trusted to the correctness of Mr. Gray's identification of the British Museum bird. I was further misled by *longirostris* being placed in the genus *Pyctorhis*, with which it has no affinity, but is a true *Malacocercus*.

* It has been re-found by Mr. Oates, see *Stray Feathers*, V, p. 249.—Ed.

531a. OETHOTOMUS ATRIGULARIS, Temminck.

= *flavi-viridis*, Moore. Dunsiri Valley, Assam.

On comparing this with a specimen from Tenasserim collected by Mr. O. Limborg, I notice that in the former the chestnut on the head does not extend so far back on the nape as in the latter, and in a specimen from the Gáro Hills it is confined to the frontal part of the head only. Assam birds have the darkish sub-terminal tip to the tail feathers as mentioned by Mr. Moore in his description. The abdominal portion is not so pure a white in the Assam bird.

619a. MINLA RUFIGULARIS, Mandelli.

This is *Alcippe collaris*, Walden.

I have compared a specimen sent home lately by Mr. Hume and find it identical with the Assam form. Mandelli's title has priority.

619b. MINLA MANDELLII, Godwin-Austen.

Through the kindness of Mr. P. L. Slater I have been able to compare Mr. Hume's *Proparus dubius* from South Burma with this bird; it is clearly distinct, one of those interesting representative races we so often find at the extreme limit of range. *M. dubius* is much paler beneath and has not got the white markings on the nape. It would be conferring a great service to ornithology if Mr. Hume would always send home similar doubtful species, which can only be satisfactorily determined by comparison with types in public and private collections.

V.—*An Account of the Tidal Observations in the Gulf of Cutch, conducted by the Great Trigonometrical Survey, under the Superintendence of COLONEL J. T. WALKER, C. B., R. E., during the years 1873-74-75. Compiled from the G. T. Survey Reports by CAPTAIN J. WATERHOUSE, Assistant Surveyor General.*

Origin and Object of the Observations.—In his Report on the Operations of the Great Trigonometrical Survey for 1866-67, Col. Walker writes:

“Dr. Oldham, the Superintendent of the Geological Survey of India, has recently drawn the attention of the Government to certain questions which have been raised regarding secular changes in the relative level of the land and sea, which are believed to be going on in various parts of the Bombay Presidency, and more particularly at the head of the Gulf which separates the province of Cutch from that of Kattywar. Dr. Oldham recommends that certain points should be selected on the south coast of Kattywar, and as far up the Gulf as possible, and that the existing relative levels of land and sea should be determined at those points by accurate tidal observations carried over as long a period as possible, the tidal stations being connected by lines of levels. Thus, by repeating the operations at a time sufficiently distant to allow the secular changes to reach an appreciable magnitude, this question, which is of much scientific importance, will be satisfactorily settled.”

The Government of India sanctioned the observations being made, and Col. Walker was making arrangements for carrying them out, when a very considerable reduction in the expenditure of the Survey Department, in consequence of the financial difficulties in 1869-70, caused the indefinite postponement of the operations. It was not until August 1872 that steps could be taken for commencing them.

The delay which thus took place is, however, not to be regretted, because it resulted in the investigations being carried on in a more complete and elaborate manner than had been originally contemplated, with a view to acquiring more comprehensive and accurate results than were at first desired.

Happening to be present at the Meeting (in Edinburgh) of the British Association in 1871, Colonel Walker ascertained that a Committee of the Association, presided over by Sir William Thomson, had initiated a system of tidal investigations which was anticipated to secure scientific results of the highest value. On studying the details of these operations he found that his original programme, which contemplated tidal observations of only a few weeks' duration, would be inadequate to detect the existence of minute

secular changes in the relations of land and sea, and that no conclusive results could be obtained unless the observations were carried over a period of rather more than a year at the commencement, and a corresponding period at the close, of the investigation. He further saw that if this were done, the value of the operations would be greatly increased, because the results would not only serve the purpose for which they were originally contemplated, but would materially contribute towards the attainment of the better knowledge of the law of the tides, which is considered by the British Association to be so important a desideratum, and which is expected to lead to an evaluation of the mass of the moon, to definite information regarding the rigidity of the earth, to an approximation of the depth of the sea from the observed velocities of tide-waves, to the determination of the retardation of the earth's rotation due to tidal friction, and also to the various practical benefits which necessarily accrue from accurate predictions of the height of the tide at any given time.

Preliminary Preparations.—With the sanction of the Secretary of State for India, Lieut. (now Captain) A. W. Baird, R. E., Assistant Superintendent G. T. Survey, who was then in England on furlough, was deputed to study the practical details of the mode of tidal registration and of the harmonic analysis of the observations, which were recommended and practised by the Tidal Committee of the British Association.

Lieut. Baird also tested at Chatham a new self-registering tide-gauge constructed by Adie, the well-known optician and mathematical instrument-maker, on the same principle as those he had previously sent out to India, which were provided with barrels of unusual length (five feet) in order that the tidal curves might be drawn on the largest scales practicable. The new tide-gauge was on the same pattern, but with a few modifications, the most important of which was the substitution of a chronometer escapement instead of a pendulum or gravity escapement for the driving clock, in order to permit of the instrument being erected on positions where the concussions of the sea waves would interfere with and perhaps stop the action of a pendulum clock. On trial it was found to work very satisfactorily.

No tidal registrations can be deemed complete without simultaneous registrations of the condition of the atmosphere, because it is well known that the rise and fall of the tides on a line of coast is materially influenced by the direction and force of the winds, and that it also varies inversely with changes in the barometric pressure. Arrangements were therefore made for supplying each tidal station with an anemometer and a barometer, both self-recording. The anemometers registered both direction and velocity and were similar to Beckley's, but smaller, in order to be light and portable. The barometers were aneroids, because safely portable self-registering mercurial barometers could not be obtained.

Selection of Stations.—On Col. Walker's return to India, in November 1872, he deputed Lieut. Baird to make a reconnaissance of the Gulf of Cutch, with a view to selecting tidal stations, and more particularly to ascertain how the instructions which had been received from the Government to establish a station "at a point as far into the Runn of Cutch as possible to which the tide has free access" could be best carried out. For a point to have free access with the sea it is necessary that it should always have at least 4 or 5 feet of water over it at lowest tides, and also that the sea should approach it directly, and not through tortuous channels; the point must also be either on the edge of the mainland or at no great distance beyond, because of the difficulty and expense of constructing a station on the foreshore. It seemed not improbable that it might not be possible to find a point at the edge of the Runn which would satisfy all the requisite conditions.

Lieut. Baird proceeded first to Júria Bandar, close to the head of the Gulf, where he fitted up a country boat for navigating the creeks and channels of the Gulf, and secured the services of an experienced pilot to accompany him in his explorations. After a month's cruising about and long searching along the muddy foreshores of the Gulf, three places well adapted for tidal observations were found. 1st, Nawanár Point, midway up the Gulf on the Cutch coast, 15 miles from Mundra; 2nd, Hanstal Point at the head of the Gulf, about 18 miles from Júria, and 3rd, Okha Point on the Kattywar coast, just at the mouth of the Gulf, opposite the Island of Beyt. At Nawanár there was a minimum depth of 19 feet of water within 336 feet of a site for a station; at Hanstal 72 feet within 160 feet of a site for a station, and at Okha 23 feet within 220 feet of a site for a station. Nawanár is about 9 or 10 and Hanstal 16 miles from the nearest village where drinking water can be procured; Okha Point has Beyt within 1 mile, but a boat is required for communication with it.

The three places selected were considered to be well adapted for the operations, which was the more fortunate in that Lieut. Baird believed them to be the only suitable points to be met with for the purpose. It is to be regretted, however, that an intermediate point could not be found on the Kattywar coast, between Okha and Hanstal, for Nawanár being on the opposite coast had to be connected with the other two stations by a very long line of levels passing round the head of the Gulf; and, as it afterwards turned out, Nawanár proved unsuitable by constant changes in the configuration of the foreshore.

Preliminary Arrangements.—The stations having been selected, preliminary arrangements were commenced.

The first question to be decided was whether the tide-gauges should be set up on stages erected in the sea beyond the low-water line, or on

masonry platforms constructed on shore at the high-water line. It is obviously desirable that the communication between the surface of the ocean and the gauge should be as direct as possible, in order that the tidal curve may be accurately delineated. Thus, it is usual to erect tide-gauges in ports or harbours where the piers, quays and landing-stages constructed for the requirements of the shipping present facilities for their being set up in the vicinity of deep water. In the Gulf of Cutch, however, the stations were all at a distance from the nearest inhabited localities and presented no facilities whatever; for not only building materials and food for the workmen, but even fresh water, had to be brought to them from considerable distances. It was thus imperative that the plan of operations should be of the simplest nature possible, so as to be carried out with the least cost and the greatest expedition. Had any jetties or piers been available for the operations the stations would have been erected on them, but under existing circumstances it was only possible to connect the tide-gauges with deep water by erecting stagings for them in the sea; and these would have had to be very strongly built to withstand the full force of the sea, without undergoing any displacement whatever, and that, not for a short time only, but for several years, so as to include both the first series of tidal registrations, taken to determine the present relations of the land and sea, and the final series which will have to be taken to determine the future relations some years hence. The stagings would, moreover, have had to be connected with the land by piers, in order to permit of ready access to the instruments at all times. The cost of such stagings and their connecting piers would have far exceeded the funds available, and therefore Col. Walker decided, though with some reluctance, on having the tide-gauges set up on shore, over wells sunk near the high-water line and connected with the sea by piping.

Final Arrangements.—The following is a brief sketch of the arrangements adopted:

Masonry wells of a diameter of about 3 feet were sunk at the stations to a depth of several feet below the lowest tides; in these wells iron cylinders with an internal diameter of 22 inches, slightly exceeding the diameter of the float of the tide-gauge, were set up vertically and connected with the sea by an iron piping carried along the shore down to the low-water line, where a flexible piping was attached and carried out into deep water. The flexible piping terminated in a rose suspended by means of buoys a few feet above the bed of the sea, in order to prevent the entrance of silt as much as possible, and was attached to the iron piping in such a manner that it might be readily removed and cleaned whenever necessary. The tide-gauges were set up over the cylinders, and their iron bed-plates indicated the planes to which the tidal measurements were referred; they were connected by

levelling with permanent bench-marks fixed in the ground in the vicinity of the stations.

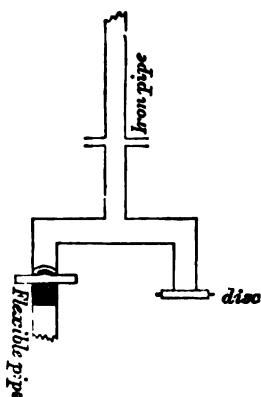
The iron cylinders were made up in sections of 50 inches in length, a sheet of wrought-iron being bent to the size required and rivetted to form a cylinder, a cast-iron flange was fitted on to each end and the faces of these carefully turned so as to fit exactly. The bottom section had a flat iron plate carefully screwed on to one end, so as to form the bottom of the well, and the whole when bolted together formed a water-tight well into which water could only enter through the piping connecting it with the sea. The size of the cylinders was decided on so as to utilise the iron sheets most economically, and when finished four men could carry one section. Before being let into the wells they were well painted over, inside and outside, with tar in order to keep them from rusting. The level of the top flange of the cylinder was about 6 feet above high-water spring tide, and about 2 feet 6 inches above the floor of the observatory. A board fitted on and screwed to the top of the cylinder, with holes for the float-bands to pass through, prevented anything falling accidentally inside the cylinder.

The rigid iron piping was ordinary gas-pipe in lengths of about 14 feet, with an internal diameter of 2 inches, which had been computed to be sufficient to permit of the transmission of the tidal wave from the sea to the cylinder in the well without sensible retardation, so that the height of the water in the cylinder should always be the same as that of the surface of the sea. In order to render the connections perfectly water-tight, as well as to facilitate the joining together of the lengths of piping, these were fitted with cast-iron flanges made to screw on to each end.

The piping was connected with the bottom of the cylinder, at 9 inches above it, by a small bend, and was then brought up vertically outside the cylinder to a height 1 or 2 feet below the lowest high-water. At this point was another bend with a stop-cock in it, and the pipe was then taken straight out down to the sea along the slope of the shore to reach low-water springs.

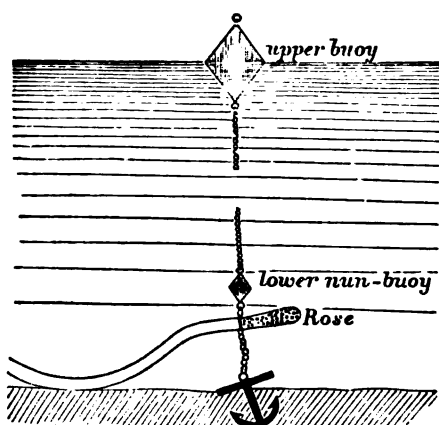
The rigid and flexible pipes were connected together by means of the following arrangement:

To the end of the rigid iron pipe a brass connecting piece, made as shown in the figure, was fitted, having two outer extremities, to one of which a flexible two-inch suction-pipe was fixed and the other closed by a brass disc with a good washer. When the flexible pipe had to be examined for cleaning, the brass disc was unscrewed and a short length of spare flexible piping with a rose at its end fitted on, and taken out to deep water temporarily. The original pipe was then taken off and cleaned, the disc being screwed on for the time in its place; then when finished the long pipe and disc were replaced in their original positions. The flexible pipe was



two inches in diameter with copper inside, just the same as the suction-pipe. It was provided in lengths of 50 or 60 feet, and in smaller one of 20 feet for temporary use only. The lengths were fitted with couplings and unions for connecting them with each other.

Lengths of this suction-pipe were joined on to the end of the iron piping in the manner above described, and taken out to deep water. At the end of the outer length a copper rose, of about 15 inches in length, 2 inches in diameter, and having about 150 holes of $\frac{3}{16}$ of an inch bored in it, was screwed on. This rose was sustained a few feet from the bot-

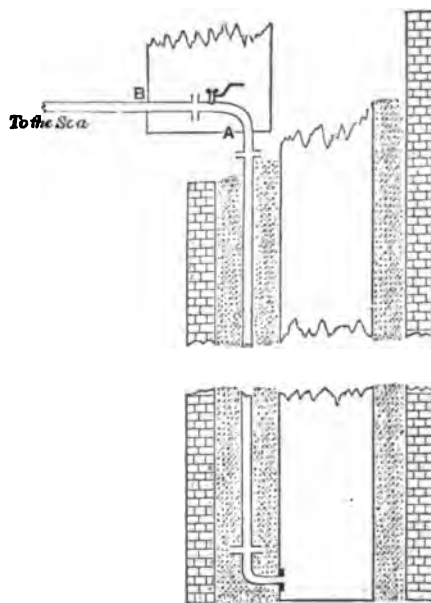


tom, being attached to a small nun-buoy by a chain and shackle with swivel, the whole being held in position in deep water by an anchor. To the top of the small nun-buoy a chain was attached, to which was fixed the large buoy floating on the surface, with plenty of slack chain to allow for rise and fall of tide, and this buoy also served to mark the position of the flexible pipe. The arrangement will be understood by reference to the annexed figure.

The level of the water in the well should obviously always coincide with that of the sea, otherwise the registrations of the gauge are worthless; it is therefore imperatively necessary to compare the inside and outside levels from time to time, in order to remove all doubt as to the efficiency of the communication between the well and the sea. For this purpose an ordinary gauge was attached to a pile driven into the bed of the sea, and its zero was connected with that of the self-registering gauge over the well, by spirit levelling, and thus a comparison of the levels could be readily made whenever desirable. On taking these comparisons during certain trial observations at Bombay, Captain Baird was surprised to find that while the levels were generally identical, there were occasional large differences which at first could not be accounted for; eventually, however, he succeeded in tracing them to the accidental presence of air inside the piping.

He soon devised a simple method of expelling the air and restoring the requisite identity of level, by fixing a stop-cock for the exit of the air at the vertical bend, where the iron piping, after rising from the bottom of the well to within a few inches of the surface of the ground, begins to slope downwards towards the sea. This bend has necessarily to be made at a point a little below the level of the lowest high-water tide, and, consequently, on opening the stop-cock at high-water, all the air inside the pipe is of course immediately expelled, and then the water inside the well at once assumes the same level as that of the sea. But for this expedient it would have been impossible to carry on the operations continuously for any length of time, as there was found to be a decided tendency for air to collect in the pipes. It was most fortunate that this was discovered during the experimental observations at Bombay, for there stop-cocks could be readily constructed and attached to the piping, which could not possibly have been done at either of the stations in the Gulf.

At Okha Captain Baird found some difficulty in keeping the stop-cock dry and having access to it. He



therefore had a water-tight box 3 feet long and 1 foot square made in halves and fitted over and under the stop-cock, holes having been cut to admit the pipes, and carefully caulked up after the box had been fitted over the pipe (see figure); in this way no water could get at the stop-cock except over the top of the box. Underneath the first 7 or 8 feet of the pipe leading to the sea, a layer of mud and stones of considerable thickness was made, and a wall of similar material built all round the stop-cock, leaving a space about 3 feet square for standing in and steps for getting down to it; also mud and sand were thrown down

between the iron cylinder and the masonry wall right up to the level of the stop-cock bend. It was found that by this means the stop-cock was quite dry and access could be had to it at any time however high the tide was.

Captain Baird spent the recess of 1873 at Bombay in preparing for the operations of the field season of 1873-74. Cylinders as above described

were constructed in suitable lengths to be easily transported to the tidal stations and there put together. The several self-registering instruments which were to be employed—the tide-gauges, the aneroid barometers and the anemometers or anemographs—were overhauled and put into good working order. The tide-gauges were tested by being employed to register the tides in the harbour of Bombay for several weeks continuously, and were set up over wells connected with deep water by piping, in order that the experimental observations should be taken under precisely similar circumstances to the actual observations. Sundry alterations and improvements were made in them, and in fact everything was done which could be thought of to ensure the instruments being found in a satisfactory condition when they were set up for work at the tidal stations. It was a matter of great importance to have all this done at Bombay, because the advantages of excellent workshops and skilled artificers were not to be met with in the places where the instruments had to be set up for observation.

While in Bombay, Capt. Baird also constructed three portable observatories for erection at the tidal stations. These observatories were made in such a manner as to be readily put together, or taken to pieces and re-erected at any other place where they might afterwards be required. They were about 12' \times 9' \times 9' and about 12 feet high in the centre, the roof sloping from the ridge to the sides which were about 8 feet high. They were clinker-built, but it was found necessary to cover them with a tarpaulin to keep out the heavy rain during the monsoons.

Operations at Okha Station.—Okha station being near the mouth of the Gulf and the nearest to Bombay, where all the preliminary arrangements were made, was selected as the first to be taken in hand. There all the instruments and stores, and the European assistants, including Mr. Peters, a skilled artificer of the Bombay Harbour Works, whose services had been obligingly placed at Capt. Baird's disposal by Major Merewether, R. E., 6 sub-surveyors and 24 men were sent, on the 13th October, 1873, direct from Bombay in a large *pattimar* (or native sailing vessel). Meeting with contrary winds, the "Kotia Romani" took such a long time to perform the voyage that Capt. Baird began to fear that she was lost with all hands on board; at last, however, she arrived with her passengers and crew nearly starved, for they had only taken a week's provisions for a voyage which lasted a fortnight. On the 5th November the stores were landed and the first thing to be done was to make an excavation for the iron cylinder. At Okha, as well as at Nawanár, the soil being sandy, it was necessary to take measures to prevent the sides of the well from falling in during the excavation, and therefore a masonry well of sufficient diameter to receive the iron cylinder and vertical shaft of the piping had to be sunk in much the same manner as the wells so frequently used in this country for the foundations of bridges and aque-

ducts. The operations were considerably facilitated by the employment of Bull's Patent Dredgers for scooping out the soil under the sinking masonry. (At Hanstal, where the soil was firm, the masonry well was unnecessary). The masonry well was completed to the full depth of 25 feet by the 4th December, and by the 20th the cylinder had been set up, the piping connected with the sea had been laid out into deep water, the observatory was erected and the several self-registering instruments—a tide-gauge, an anemometer and an aneroid barometer—were all in position and ready for the preliminary trial of their performances. By the 23rd everything was complete, the instruments were all working well, and Capt. Baird was about to proceed to the next station, when an accident happened through a native boat drifting down past the station about 3 in the morning of the 24th December, and dragging her anchors across the flexible pipe, smashing it and carrying off a large portion of it as well as the buoys, anchors &c. Being on the spot, Capt. Baird was able to rectify the damage and to arrange for protecting the piping by laying out and anchoring hawsers around it. Guards were also provided to prevent boats from approaching the buoys. Thus this accident, though very annoying at the time, proved of use in showing the necessity of taking special precautions for the protection of the piping from injury. Similar measures were taken at the other stations, and these precautions were essential to the success of the operations, because in case of any similar accident happening to injure the piping, the native subordinate who would ordinarily be left in sole charge of the station to keep the instruments in order and look after their performances, would be unable to repair the damage without the personal help of Capt Baird or the European assistant, to obtain which would probably cause suspension of the tidal registrations for a fortnight or more, and greatly impair the value of the observations.

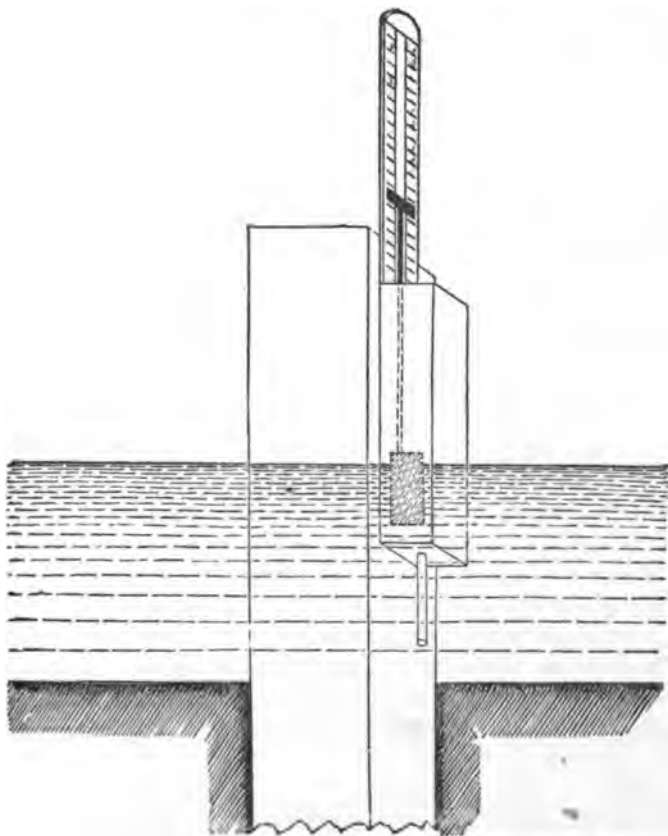
While engaged in completing the arrangements at Okha, Capt. Baird sent his assistants in advance to Hanstal and Nawanár to sink the wells, erect the observatories and get everything ready for him to set up the instruments.

The observatory at Okha was fixed on three cross-beams fitted on the tops of six large piles embedded 8 feet in the sand. The cylinder was about 2 feet from the eastern end; the tide-gauge being of course as nearly as possible in the centre of the building. The aneroid barometer was placed carefully on a shelf at one corner. The anemometer was fixed to a shelf so that the upright pipe passed through the roof close to the ridge at the western end (the rain-gauge being close to it on the outside). A platform was made to get at the anemometer easily, and this served a double purpose, as it was also the framework for a guard to protect the pendulum and clock of the tide-gauge, and cloth having been fixed all round it, kept any wind from getting to the pendulum.

The self-registering tide-gauge was carefully so placed that the band allowed the float to be 8 inches from one side of the cylinder, while it was the same distance itself from the other side. The instrument having been carefully levelled by wedges, the trestle was secured with screws to the floor; a hole was cut in the floor and a small box let down (properly fitted so as to allow no sand to come in), in order that the counterpoise weight might be able to act for the entire range of the instrument.

The float band was made 35 feet 6 inches long and 33 feet of chain was added to this, and fixed at its other end to the hook under the float, forming a continuous band as it were. The scale of wheels adopted here was $\frac{1}{4}$; the barrel being 5 feet long, that scale was the largest that could be used for a 14·90 feet range of tide. The float had a swivel to which the band was attached, and the band also passed through two guides fixed to an upright scale on one side, and through another guide fixed to the trestle on the other.

The temporary tide-gauge, consisting of a pile firmly imbedded in the sand and standing about 8 feet out of the ground, was placed about the



level of low-water neaps; to this was attached a box containing a copper float, and to the float was attached a deal rod with a pointer at the end of it about $6\frac{1}{2}$ feet above the float. In the bottom of the box a pipe, two feet long, of small diameter was fixed so as to permit the sea to have access to the float; the box itself was about 6 inches square and 6 feet high, the side of it attached to the pile was extended upwards for 6 feet and had a groove in it in which the upright rod with the index worked (*vide figure*), so that by having this upper part numbered from a certain zero, the level of the sea below this zero could be at once read off. It was found by careful trial in a bucket of water that the pointer always recorded 6 feet 2 inches above the level of the water in which the float worked—the scale was made accordingly; levels were taken to connect the temporary tide-gauge with the top of the cylinder, for comparison of level of water inside and outside.

It will be unnecessary to enter into details of the operations at each station as they were similar to those at Okha, of which the principal outlines have been given. Full details will be found in Capt. Baird's report appended to the General Reports of the Great Trigonometrical Survey for 1873-74 and 1874-75.

Commencement and Progress of the Observations.—The regular tidal registrations were commenced at Okha by the end of December 1873; at Hanstal by the end of March 1874, and at Nawanár by the end of April. It was hoped that they might have been carried on continuously for at least a year, or perhaps longer, at each station, in order to furnish the requisite data for investigations of the separate influence of each as well as the combined of all the principal tidal constituents, and the least that is needed for this purpose is a series of observations extending over a year. During this time the errors of the clocks for driving the barrels of the self-registering instruments would have to be frequently determined and the clocks corrected; the instruments would also have to be examined and cleaned, and possibly repaired also, and the relations between the curves on the diagrams and their zero lines would have to be carefully re-determined from time to time; and all this would have to be done either by Capt. Baird or by his assistant Mr. Rendell.

Capt. Baird accordingly drew up a programme for the periodic inspection of the stations and arranged that he and Mr. Rendell should make tours of inspection in turn. It was calculated that a tour embracing all three stations, would take about a month from the date of leaving to that of returning to recess quarters; these had been established in Rajkote, the nearest town to the Gulf where house accommodation suitable for Europeans could be obtained. Anticipating that during the monsoon months the weather at the tidal stations might be found too cloudy to permit of astronomical observations for determining the clock errors, Capt. Baird provided

himself with two portable chronometers which were rated at Rajkote and carried about on the tours of inspection, for comparison with the clocks.

Difficulties of the Operations.—The operations were carried on under many and great difficulties, and Capt. Baird and his assistants incurred considerable risk when crossing the Gulf in native sailing vessels, as they frequently had to, whenever their presence was required at either of the stations. Huts had to be built and iron water-tanks provided at each station for the native subordinates who were placed in charge of the instruments, and for the men of the guard furnished by the Durbar of the Native State in which the station is situated. Arrangements also had to be made to supply these men with food and drinking water, which at Hanstal was no easy matter, for the nearest point whence these necessities of life were procurable was about 25 miles off. At each station a line of post runners had to be established to the nearest points on the main line of postal communication, as it was essentially necessary that Capt. Baird should receive daily reports from the men in charge of the observatories.

The inspection of the observations necessitated a great deal of hard marching and entailed much exposure and privation. Even so early as in the month of May, before the setting in of the monsoon, the Runn of Cutch was covered with water, from six inches to a foot in depth, which had to be waded through for many miles distance to reach the station at Hanstal. At such seasons travellers usually cross the Runn by riding on the camels of the country; these animals are bred in large numbers along the borders of the Gulf, and are accustomed from their birth to wander about the swamps, browsing on the mangrove bushes, and thus they learn to walk with ease and keep their feet on ground which would be impossible to most other camels. Of his journey with Mr. Rendell, to Hanstal in the month of May, Capt. Baird writes, "Our only land-marks in the whole of the last 14 miles were two small mounds of earth thrown up—when there were postal chowkies there—at 4 or 5 miles apart, and the observatory itself; we both felt a curious sensation as if we were being carried out to sea, which was occasioned by seeing small branches of scrub floating on the surface of the water and being driven by the wind inland; and once, with the exception of one of the mounds above mentioned in the distance, there were no fixed objects visible to destroy this optical illusion." Later on, when the monsoon set in, the difficulties of locomotion were greatly increased; direct communication with Nawanár, by crossing the Gulf in a sailing boat, became impossible, as none but native vessels were available for the purpose, and they could not venture across in the strong gales then prevailing; and in order to reach that station a very long circuit had to be made round the head of the Gulf, crossing the Runn at

its narrowest point opposite to Wawania. Moreover the common unmetalled roads in a black-soil country, as is the western portion of Kattywar, become all but impassible during the rains; and thus Capt. Baird was often unable to get over the ground more expeditiously than at the rate of about a mile an hour. Between the 7th July and the 8th September he was actually 88 days in the field, and marched nearly 800 miles under most adverse circumstances.

General Working of the Tide-gauges.—The general working of the tide-gauges at the three stations has now to be noticed.

At Okha the registrations went on most satisfactorily throughout 1874 and the following field season; there were very few breaks of continuity of the records, and they were very short and of no importance. At Hanstal where the water was very muddy, and not pure and clear as at Okha, the breaks were more numerous and longer; they were caused sometimes by the driving-clock getting out of order, but more frequently by the deposit of fine mud in the well and piping of the gauge, notwithstanding the precaution which had been taken to keep the rose at the extremity of the piping high above the mud-banks; this necessitated the occasional suspension of operations while the mud was being removed, and care was always taken to make the break between the times of high and low water, whenever possible; thus, as the record of the highest and lowest points of curves has been secured in almost all instances, the breaks may usually be interpolated between them by hand, in conformity with the collateral curves, without any risk of significant error. The foreshore at Okha being sand and rock without mud, there was no tendency there for the pipe to become choked. Both at Okha and at Hanstal air was found to enter the iron piping, whenever the latter was laid bare by the action of the surf, which frequently happened; but it was readily expelled at high-water, by opening the stop-cock which has already been described as attached to the piping for that purpose.

At Nawánár, matters went on less prosperously. When inspecting this station in July 1874, Capt. Baird found everything apparently in good order; the curves on the diagram seemed at first to be all that could be desired, but it was soon evident that they were erroneous, for the level of the water in the well differed very sensibly from the sea level. On examining the piping, the extreme end was found to be buried in sand above the low-water line, at a spot where a few weeks before, there had been a depth of 20 feet of water at low tide, but which was then left bare for some time daily. On further examination it was ascertained that the configuration of the foreshore had entirely changed, and an extensive sandspit had formed on the line of the piping; this had been caused by the drift from a belt of sand-hills to the south, under the influence of the strong winds which blew from the south-west during the monsoon, the registered veloci-

ties of which were 860 to 890 miles daily, for several days preceding the misadventure. This accident necessitated the suspension of the registrations at Nawanár until such time as the piping could be extracted and again put into communication with deep water. It was expected that the original configuration of the foreshore would probably be restored by natural causes, when the wind veered round to the usual direction, soon after the commencement of the cold-weather months; but this expectation was disappointed, and as the cold season wore on it became only too certain that the piping which lay beyond the low-water line would never be recovered. A supply of new piping was therefore obtained from Bombay and attached by Mr. Rendell to the land portion of the original pipe; and by the commencement of March 1875, after a break of 9 months' duration, the tide-gauge was once more in free communication with the sea, and there appeared to be every probability that it would so remain at least till the setting in of the next monsoon.

But within a fortnight after the re-starting of the tide-gauge at Nawanár, the foreshore again shallowed, and the new piping was covered with a deposit of silt and mud, nearly up to the level of the rose at its outer extremity. Mr. Rendell at once cut away the flexible piping and substituted several lengths of iron piping, supported by being attached to stakes driven vertically into the ground. By remaining on the spot for two months, taking measures to prevent the rose from being reached by the constantly rising mud and silt, Mr. Rendell succeeded in securing satisfactory and continuous readings for the whole of the time, and he checked them occasionally by hourly readings taken *pari passu* on a graduated staff, which had been set up in the sea in deep water, in order to afford a means of verifying the indications of the self-registering gauge. The station of Nawanár has thus been proved to be unsuitable for continuous tidal observations, extending over a long period, for it is only during the months of fine weather between November and May, that observations can be carried on there, otherwise than by setting up the tide-gauge on a staging erected for it out in deep water, the cost of which would be inadmissible.

Preliminary Results.—The preliminary results of the observations up to September 1874, as worked out by Capt. Baird, show that the greatest range of the tide was—

14·8 feet at	Okha.
19·6 ,,	Nawanár.
21·2 ,,	Hanstal.

or two to four feet more in each instance than the ranges given in the marine Charts.

Very fairly approximate values of the progress of the tidal wave, up and down the Gulf, have also been obtained, showing that—

High-water occurs at Nawanár 1h. 5m. after Okha.

"	Hanstal 1	40	"
Low-water occurs at Nawanár 1	36	"	
"	Hanstal 2	53	"

The results obtained from the combined tidal and leveling operations show that the mean sea-level is higher by 7 inches, at the head of the Gulf, and by 4 inches, midway up, than it is at the mouth of the Gulf.

The curves of the self-registering aneroid barometers were compared four times daily with a mercurial barometer, and the differences met with—after allowing for index errors—were usually so trivial and unimportant that every confidence may be felt in the general accuracy of the curves. The aneroids are of a delicate construction and are liable to get out of order, but as spare ones were available, no break of importance occurred at either station.

The anemometers were less satisfactory in their working, probably because they were so much more exposed to the vicissitudes of the weather. The long continuance of winds coming from the same quarter caused the direction gear to clog, and until this was discovered the recorded directions are to some extent incorrect. On the other hand, the velocity gear was kept in constant action by the strong winds prevailing. Several severe gales were recorded. The greatest velocities registered in 24 hours were—

620 miles at Okha on the 20th June, 1874.

890 " Nawanár " 26th "

1130 " Hanstal " 5th August, "

On the latter date the anemometer of Hanstal recorded 270 miles in the three hours between 2 A. M. and noon. Capt. Baird is not entirely satisfied with the performances of these instruments; but, considering their small size (for the sake of lightness and portability), and their exposure to fierce winds, to rain and, worse than all, to the constant oxidising influence of the sea, Colonel Walker thinks it improbable that any instruments would, under similar circumstances, have given much better results.

The total rainfall during the monsoon of 1874, as registered by the rain-gauges set up at each station, was—

10·75 inches at Okha.

13·61 " Nawanár.

18·40 " Hanstal.

21·91 " Rajkot (40 miles inland).

It will be seen that, a greater range of tide, a greater velocity of wind and a greater rainfall, have been registered at the head than at the mouth of the Gulf, and intermediate values at the midway station of Nawanár.

The scientific value of the observations is greatly increased by the contemporaneous observations of the barometric pressure, the velocity and direc-

tion of the wind, and the amount of rainfall; and it is believed that no series of tidal observations has been better furnished than these with the requisite data for separating local atmospheric influences from the true tidal constituents, which are caused by the varying position of the sun and moon.

Spirit-leveling operations.—At short distances round each station three blocks of stone were sunk in the ground to serve as bench-marks for future reference, and each of them was carefully connected with the zero of the tide-gauge. Bench-marks were also placed in position, one at about every 10 miles, from Okha station along the road to Hanstal and thence to Nawanár in Kutch across the Runn. Bench-marks were also laid down with reference to the nearest Great Trigonometrical Stations. During the field-season of 1874-75, Capt. Baird conducted a series of spirit-leveling operations for determining the present relative levels of the datum points of the three tidal stations, and of the stone bench-marks which had been laid down a year previously along the lines to be levelled over. The length of the main lines connecting the three tidal stations was 275 miles, which was leveled over independently by Capt. Baird and Narsing Dass, in accordance with the rigorous system which has obtained for several years past in the G. T. Survey. 29 miles of branch lines were also executed, in order to connect the stations of the Kattywar triangulation with the tidal stations.

In working between Nawanár and Hanstal, Capt. Baird had to make a considerable *detour* round the head of the Gulf, crossing the Runn between Shikarpur and Mallia. Several bench-marks were fixed on the Runn, and they will be important points of reference when these operations are repeated with the tidal observations some years hence, when a sufficient interval shall have elapsed to allow of the rising or sinking of the surface of the ground to an appreciable extent. The existing surface-level of the Runn has been obtained at a number of points, for Capt. Baird took the precaution of having all the pins on which the leveling staves were set up, driven downwards until their heads were exactly flush with the surface of the ground.

Operations during the Monsoon.—Considerable anxiety was felt as to the possibility of securing continuous records during the monsoon, when heavy gales are prevalent; but every precaution was taken to strengthen the wooden observatories in which the instruments were set up, and to anticipate and provide for all possible contingencies; and it was most satisfactory that, although the monsoon of 1874 set in very severely and lasted long, the observatories all stood firm, and the tide-gauges and other self-registering instruments remained in good working order throughout the season.

Close of the Operations.—The carrying out of the periodical inspections during the monsoon was the most trying and difficult part of the operations.

During the monsoon of 1874 this duty was performed entirely by Capt. Baird, who had generously given his assistant leave of absence on urgent private affairs at that time. It had, however, proved to be so arduous and to entail so much exertion and exposure, that Colonel Walker felt he would not be justified in requesting Capt. Baird to carry on the inspections during the monsoon of 1875. He was therefore directed to continue the registrations up to within a few days of the commencement of the monsoon, and then to dismantle all the stations, and remove the instruments.

Accordingly at the close of the field-season of 1874-75, the instruments were taken down and the observatories dismantled. At each station the vertical iron cylinder, in which the float of the guage had acted, was left *statu quo*, together with a length of the iron piping, extending about 50 feet seawards from the cylinder. The cylinder was filled with clean dry sand, and closed above with a thick planking, after which a massive pile of stones was raised over the ground around it, to serve the double object of a protection and an indication of the position for future reference.

The three bench-marks in the immediate vicinity of the cylinder, with each end of which the datum of the guage had been connected, were similarly covered over. Finally the several cairns were placed under the protection of the local officials; and it is to be hoped that the cylinders and bench-marks will be readily discovered whenever the second series of operations are commenced, and that they will be found to have remained undisturbed meanwhile.

Thus the periods during which the tidal heights have been continuously registered at the three stations are, $16\frac{1}{2}$ months at Okha, 14 months at Hanstal, 2 months at Nawanár in 1874 and 2 months more in 1875. As already noticed, simultaneous observations of the direction and velocity of the wind and of the barometric pressure were made by the anemograph and barograph which were set up at each station.

The long break in the registrations at Nawanár is to be regretted. But as the station lies nearly midway up the Gulf, it is probable that the values of the difference between the mean level for the periods of actual observation and the mean level for the entire year, which are given by the registrations at Okha and Hanstal, may be applied proportionately to the results at Nawanár, to obtain the mean level for the year there, and Capt. Baird found that this plan gave very accordant and promising results.

When all the observations were completed, the ordinates of the several curves were measured, (taking full account of clock-error whenever there was any) and then tabulated for each hour of the day. The numerical results thus obtained serve as the data on which the analysis of the observations was subsequently based.

Thus ended the first series of operations, to determine whether the relations of land and sea are constant or changing. Col. Walker writes:

"Great credit is due to Capt. Baird for the manner in which he conducted the task entrusted to him. The difficulties he had to contend with in obtaining exact registrations continuously for such long periods were very serious and formidable; all the stations were situated at points on the coast line which were very far from the nearest habited localities; and the inspections during the season of monsoons, which work was done entirely by himself, necessitated constant travelling during the most inclement time of the year, and entailed an amount of risk and exposure which would tell on a constitution of iron."

Final Results.—The analysis of the results of the observations has necessarily been a work of time and has only lately been completed. Col. Walker felt assured that it would be best performed with the assistance of Mr. Roberts of the Nautical Almanac Office in London, by whom all the tidal observations taken for the British Association had been, and are still being reduced and analyzed, under the superintendence of Sir W. Thomson, and who had, previous to the commencement of the observations, aided Capt. Baird in the preparation of an account of the practical application of the harmonic analysis by which tidal observations are reduced for the British Association. Sanction was therefore obtained for Capt. Baird to remain in England and reduce his observations with Mr. Roberts' assistance. The results will be presently stated. But first it is necessary to give a brief epitome of the method of investigation which has been followed.

The rise and fall of the level of the ocean, twice, or nearly so, in twenty-four hours, is well known to be due to the attractions of the sun and the moon. If the orbit of the earth and that of the moon were quite circular and lay in the plane of the equator, and if the moon performed its revolution round the earth in the same time that the sun appears to revolve around the earth, then there would be two tides daily, differing from each other in form—should the sun and moon not be in conjunction—but recurring alike from day to day. The moon, however, makes her circuit of the earth in 48 minutes over the twenty-four hours, and thus the sun makes thirty apparent circuits of the earth while the moon is only making twenty-nine; moreover, the orbits of the earth and of the moon are not circular, nor are they situated in the plane of the equator. Thus the positions of the sun and moon, relatively to the earth, are momentarily varying in distance, declination and right ascension. Consequently, the level of the ocean is subject to momentary variations in the dynamical action of the disturbing bodies; and these cause a variety of tides which recur periodically, some in short, others in long, periods.

In the present investigations, the short and the long period tides have been analyzed by different methods. The former—which here embrace all tides recurring in periods of or about a day in duration, and in any aliquot part of the *quasi*-diurnal period—have been treated in accordance with the

synthesis of Laplace. Thus a number of fictitious stars are assumed to move, each uniformly in the plane of the earth's equator, with angular velocities which are small in comparison with that of the earth's rotation, so that the period of each star is something not very different from 24 mean solar hours, and ranges between a minimum of 23 hours and a maximum of 27. Each star is supposed to produce a primary tide in its *quasi*-diurnal period, and also various sub-tides which run through their periods in $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ or some other aliquot part of the primary period; but of these sub-tides it may here be observed that some are considerably larger than their so-called primaries, as for instance, the lunar semidiurnal tide, the magnitude of which is enormously greater than that of the lunar diurnal. The primary is simply the tide of which the period is nearest to 24 mean solar hours.

Thus the momentarily varying level of the surface of the ocean is supposed to be the resultant of a large number of tides, each of which is perfectly independent of all the others, and has its own amplitude and period of revolution, which remain ever constant throughout all time. Occasionally several of the most important tides are in conjunction, and then the range between high and low-water is a maximum, as at spring tides; at other times some tides are in opposition to others, and then the tidal range is a minimum, as occurs at neap tides.

. Every tide may be represented by a circle of known diameter; and if we suppose a point to move uniformly right round the circumference of this circle so as to make a complete revolution in the time which is the tide's period, then the height of the point above or below the horizontal diameter of the circle at any moment, represents the height of the tide at that moment.

By the synthesis of Laplace we are able to find, from continuous observations of the varying level of the sea, the amplitude and the epoch (as they are called) of each of the several tides of which the height of the sea-level at any moment is the resultant. The amplitude is the radius of the representative circle, the epoch enables us to ascertain the point which the tide has reached at any given moment during its movement over the circumference of the circle. Thus when we know the amplitudes, the epochs and the velocities of rotation of any number of constituent tides, we are in a position to be able to compute and predict the height of the sea-level, at any future moment, at the station where the observations on which our calculations are based were taken.

The velocity of rotation of a tide rests primarily on certain combinations of the angular velocities of the earth's rotation round its axis, the moon's rotation round the earth, the earth's round the sun, and the progression of the moon's perigee, which are decided on *a priori* from theoretical considerations. These preliminary angular velocities are the arguments of the several fictitious stars of Laplace's method.

The portion of the height of the sea-level above or below its mean height (with reference to some fixed datum line), which is due to the combined influences of the several tides produced by any one of the fictitious stars, is given by the following well-known expression of the law of periodicity:—

$$h = R_1 \cos(nt - \epsilon_1) + R_2 \cos(2nt - \epsilon_2) + R_3 \cos(3nt - \epsilon_3) + \dots$$

in which h is the height above mean sea at any moment, t is the time expressed in mean solar hours, commencing at 0^h, astronomical reckoning, and n is the angular velocity of the star in degrees of arc per mean solar hour, so that $360^\circ \div n$ denotes the period of the star in hours of mean time. R_1 is the amplitude, and ϵ_1 the epoch of the full-period tide; R_2 and ϵ_2 , R_3 and ϵ_3 , &c., are the amplitudes and epochs of the sub-tides, whose periods are one-half, one-third, &c., that of the primary period. The amplitude is the semi-diameter of the circle whose circumference indicates the path of a tide. The epoch is the arc which, when divided by the angular velocity of the tide, gives the hour-angle when the height of the tide is a maximum; this occurs, on the day of starting, when $nt = \epsilon_1$ for a primary tide, when $2nt = \epsilon_2$ (and again 12 *quasi*-hours afterwards) for a tide whose period is half that of the primary, and so on.

Thus, if we now put h for the height of the sea-level at any moment, and A for the value of the height of the mean sea-level which results from the combined influence of the whole of the fictitious stars, we have—

$$h = A + \Sigma \left\{ R_1 \cos(nt - \epsilon_1) + R_2 \cos(2nt - \epsilon_2) + \dots \right\}$$

where the symbol Σ stands for the summation of the whole of the terms within the brackets, which relate to all the fictitious stars.

There are two principal stars, respectively called S and M for brevity, the first of which represents the mean sun, or that point in the plane of the earth's equator whose hour-angle is equal to mean solar time; the second represents the mean moon, a point moving in the plane of the equator with an angular velocity equal to the mean angular velocity of the moon. The other fictitious stars respectively furnish the corrections to S and M for declination and parallax, to M for lunar evection and variation, and to S and M for the compound actions which produce what are called Helmholtz Tides, &c. The 24th part of the period of star S being an hour, that of any other of the fictitious stars may be conveniently spoken of, and is here called a *quasi*-hour.

To find the argument (the angular velocity n of the preceding formulæ) for each fictitious star, various combinations have to be made of the following fundamental angular velocities, *viz.*:—

γ , the earth's rotation	=	15°·0410686	per mean solar hour.
σ , the moon's revolution round the earth..	=	0·5490165	” ”
μ , the earth's revolution round the sun....	=	0·0410686	” ”
ω , the progression of the moon's perigee ..	=	0·0046418	” ”

The several fictitious stars whose tides have been analyzed in these investigations, are—

S, with argument $n = \gamma - \eta$	= 15°.
M " $\gamma - \sigma$	= 14°4920521
K " γ	= 15°0410686
O " $\gamma - 2\sigma$	= 13°9430356
P " $\gamma - 2\eta$	= 14°9589314
J " $\gamma + \sigma - \hat{\omega}$	= 15°5854433
Q " $\gamma - 3\sigma + \hat{\omega}$	= 13°3986609
μ " $\gamma - 2\sigma + \eta$	= 13°9841042
N " $\gamma - \frac{3}{2}\sigma + \frac{1}{2}\hat{\omega}$	= 14°2198648
L " $\gamma - \frac{1}{2}\sigma - \frac{1}{2}\hat{\omega}$	= 14°7642394
ν " $\gamma - \frac{3}{2}\sigma - \frac{1}{2}\hat{\omega} + \eta$	= 14°2562915
λ " $\gamma - \frac{1}{2}\sigma + \frac{1}{2}\hat{\omega} - \eta$	= 14°7278127
MS " $\gamma - \frac{1}{2}\sigma - \frac{1}{2}\eta$	= 14°7460261
and SM " $\gamma + \sigma - 2\eta$	= 15°5079479

The *quasi*-hour angles of the several fictitious stars, other than S, at mean noon of the day of starting, were found by putting

γ = the Sidereal time,

η = the Sun's mean longitude = γ ,

σ = the Moon's mean longitude,

$\sigma - \hat{\omega}$ = the Moon's mean anomaly,

and taking the corresponding numerical values of each element, for the hour and station, from the Nautical Almanac and Hansen's Lunar Tables, and then substituting these values in the preceding symbolic expressions for the hourly variations of the several stars.

The number of stars and the angular velocity of each star having thus been decided on, *a priori*, from theoretical considerations, the values of the constants R and ϵ for the tidal constituents of each star have to be determined from the evidence afforded by the tabulated values of the height of the sea-level for every hour of the day during the entire period of observation; this should not be less than 371 days. The values of the constants have been computed for the several tides at the three stations of Okha, Nawanár, and Hanstal, and are given below. It will be remembered that Okha is situated at the entrance to the Gulf of Cutch, Nawanár midway up the Gulf, and Hanstal at its upper extremity; also that continuous observations over a period of not less than 14 months were obtained at the upper and lower stations, whereas at the middle station, Nawanár, there was a break of several months, in consequence of an alteration of the fore-shore during the monsoon of 1874; thus the results for Nawanár are far from being as exact and complete as those for the two other stations.

Table of the Constants.

	OKHA.	NAWANAR.	HANSTAL.
	Feet. °	Feet. °	Feet. °
The star S	$R_1 = 0.0741, \epsilon_1 = 149.89$	Wanting.	$R_1 = 0.1292, \epsilon_1 = 164.01$
	$R_2 = 1.2224, \epsilon_2 = 14.37$	$R_2 = 1.8933, \epsilon_2 = 55.33$	$R_2 = 1.9277, \epsilon_2 = 84.51$
	$R_3 = 0.0132, \epsilon_3 = 116.57$	$R_3 = 0.0131, \epsilon_3 = 359.56$	$R_3 = 0.0211, \epsilon_3 = 61.74$
	$R_4 = 0.0030, \epsilon_4 = 20.92$	Wanting.	$R_4 = 0.0069, \epsilon_4 = 166.57$
	$R_5 = 0.0006, \epsilon_5 = 219.81$	Ditto.	$R_5 = 0.0025, \epsilon_5 = 158.63$
	$R_6 = 0.1122, \epsilon_6 = 120.86$	Ditto.	$R_6 = 0.1208, \epsilon_6 = 155.61$
The star M	$R_1 = 3.6936, \epsilon_1 = 348.08$	$R_2 = 5.8448, \epsilon_2 = 25.32$	$R_1 = 6.6291, \epsilon_1 = 46.52$
	$R_2 = 0.0289, \epsilon_2 = 22.10$	Wanting.	$R_2 = 0.0534, \epsilon_2 = 93.55$
	$R_3 = 0.1265, \epsilon_3 = 108.88$	$R_3 = 0.1023, \epsilon_3 = 275.00$	$R_3 = 0.6803, \epsilon_3 = 331.55$
	$R_4 = 0.0056, \epsilon_4 = 272.57$	Wanting.	$R_4 = 0.2760, \epsilon_4 = 248.94$
	$R_5 = 0.0102, \epsilon_5 = 100.06$	Ditto.	$R_5 = 0.0726, \epsilon_5 = 154.36$
	$R_6 = 1.5605, \epsilon_6 = 146.60$	$R_1 = 1.6857, \epsilon_1 = 156.00$	$R_6 = 1.6502, \epsilon_6 = 174.60$
The star K	$R_1 = 0.4207, \epsilon_1 = 24.82$	$R_2 = 0.4780, \epsilon_2 = 76.11$	$R_1 = 0.6767, \epsilon_1 = 88.63$
The star O	$R_1 = 0.8095, \epsilon_1 = 322.67$	$R_2 = 0.7987, \epsilon_2 = 332.04$	$R_1 = 0.8807, \epsilon_1 = 340.76$
The star P	$R_1 = 0.3844, \epsilon_1 = 319.94$	$R_1 = 0.2806, \epsilon_1 = 342.02$	$R_1 = 0.3839, \epsilon_1 = 353.65$
The star J	$R_1 = 0.1231, \epsilon_1 = 176.32$	$R_1 = 0.1699, \epsilon_1 = 191.77$	$R_1 = 0.1091, \epsilon_1 = 222.61$
The star Q	$R_1 = 0.1596, \epsilon_1 = 324.68$	$R_1 = 0.1697, \epsilon_1 = 335.14$	$R_1 = 0.1618, \epsilon_1 = 343.23$
The star L	$R_1 = 0.1511, \epsilon_1 = 322.77$	$R_2 = 0.3569, \epsilon_2 = 226.93$	$R_2 = 0.3892, \epsilon_2 = 238.32$
The star N	$R_1 = 0.7551, \epsilon_1 = 322.94$	$R_2 = 1.2205, \epsilon_2 = 11.72$	$R_2 = 1.1535, \epsilon_2 = 26.76$
The star λ	$R_1 = 0.0712, \epsilon_1 = 204.40$	$R_2 = 0.1466, \epsilon_2 = 251.10$	$R_2 = 0.2268, \epsilon_2 = 219.57$
The star ν	$R_1 = 0.1592, \epsilon_1 = 8.50$	$R_1 = 0.2975, \epsilon_1 = 5.43$	$R_2 = 0.2864, \epsilon_2 = 48.24$
The star μ	$R_1 = 0.1896, \epsilon_1 = 184.26$	$R_2 = 0.4026, \epsilon_2 = 186.44$	$R_2 = 0.5569, \epsilon_2 = 179.74$
The star SM	$R_1 = 0.0435, \epsilon_1 = 291.24$	Wanting.	$R_2 = 0.1309, \epsilon_2 = 297.74$
The star MS	$R_1 = 0.0619, \epsilon_1 = 112.37$	Ditto.	$R_4 = 0.3888, \epsilon_4 = 13.01$

It will be seen that the principal tides are first the *quasi*-semi-diurnal of M, and then the semi-diurnal of S and the *quasi*-diurnal of K, which range from one-third to one-fourth of the former. S and M being the principal stars, their sub-tides, down to the three-hourly tide of S and the corresponding tide of M, have been computed. For K the *quasi*-diurnal and semi-diurnal tides were computed; for the stars O to Q only the primary tides. For the stars L to SM there are no primaries, and the tides of longest period are the *quasi*-semi-diurnal; for MS the longest tide is the *quasi*-semi-diurnal; these, being the principal ones for each star, have been computed.

Here it is necessary to observe that the number of sub-tides which have to be investigated in each instance, in order to evaluate the full influence of the star, is a matter which can only be decided after considerable experience of such investigations has been gained by the analysis of the tides at a great variety of stations. It was therefore left to Mr. Roberts, whose practical familiarity with the subject probably exceeds that of any other individual, to prescribe the number of terms to be computed for each star.

On inserting the numerical values of the constants B and ϵ in the general expression, and substituting for nt its values in succession for every hour from the starting-point, the height (in feet) of each tide and sub-tide may be computed for every hour. The sum of these gives the portion of the height of the sea-level at that hour which is due to the influence of the short-period tides. This usually far exceeds the portion which is due to all other causes, and is thus frequently taken to represent the whole height.

Should it be desired to compute the hourly heights for any day of any year, without commencing at the starting-point of the observations, as may be necessary when tidal predictions are required, the values of γ , η , σ , and ω must be found, as stated on page 46, for mean noon of the day which may be adopted as the new starting-point; the *quasi*-hour-angles of the several fictitious stars, other than S, at that moment must then be found, after which those for the succeeding hours may be obtained by successive additions of the respective hourly increments which are due to each star.

The values of the constants B and ϵ having been determined for each of the three tidal stations, the next step taken was the calculation of the height of the sea-level at each hour, throughout the entire period of registration at each station. The differences between the observed and the computed values were then taken as the data for calculating the influence of variations in barometric pressure, and in the velocity and direction of the wind, on the sea-level. Equations were formed in which the unknown quantities were B , the effect of a barometric pressure of one inch, and N and E , the effects of the North and the East components respectively of winds blowing at the rate of 10 miles an hour. Of these equations there were as many as the number of days of observation; they were solved by the method

of minimum squares. Corrections were then computed for the daily variations of the atmospheric influences on the sea-level, and were applied to the values of height resulting from the previous investigations of the short-period tides. Finally, the differences between the heights thus determined and those actually observed were taken as the data for calculating the influence of each of the long-period tides.

The evaluation of the atmospheric influences gave the following factors for changes of sea-level due to a barometric pressure of one inch, and to north and east winds travelling with a velocity of 10 miles per hour:—

			At Okha.	At Hanstal.
Barometric pressure	...	...	+ 0·356 feet	— 0·438 feet.
North Wind	...	...	— 0·191 „	— 0·262 „
East Wind	...	...	+ 0·161 „	+ 0·087 „

These results are not satisfactory; the height of the sea-level at Okha appears to increase with an increase of barometric pressure, which is scarcely possible. It happens that at this station the changes of pressure occurred, as a rule, simultaneously with the changes of wind; and thus it is impossible to determine the separate effect of each, otherwise than by some arbitrary method of treatment. The observations will therefore be again analyzed, with a view to ascertaining whether they may not be made to yield more consistent results. Meanwhile, the values of the atmospheric factors already obtained must be considered to be only approximate, giving fairly accurate results when employed collectively but not individually.

Of the constants for the long-period tides the following values have been computed for the stations of Okha and Hanstal, after the elimination of atmospheric influences, by employing the preliminary values of the factors which are given in the preceding paragraph. At Nawánár sufficient observations are not forthcoming for the evaluation of either the atmospheric or the long-period tides.

Long-period tides, and their Constants.

- ($\sigma - \bar{\omega}$) Lunar monthly elliptic tide,
 2σ Lunar fortnightly declinational tide,
 $2 (\sigma - \eta)$ Luni-solar synodic fortnightly tide,
 η Solar annual elliptic tide,
 2η Solar semi-annual declinational tide,

OKHA.			HANSTAL.		
Feet.	°	Tide.	Feet.	°	
$R = 0\cdot058$, $\epsilon = 311\cdot88$		($\sigma - \bar{\omega}$)	$R = 0\cdot107$, $\epsilon = 14\cdot17$		
„ 0·070, „ 52·73		2σ	„ 0·142, „ 45·74		
„ 0·136, „ 249·19		$2 (\sigma - \eta)$	„ 0·163, „ 11·76		
„ 0·162, „ 3·11		η	„ 0·024, „ 195·32		
„ 0·121, „ 144·75		2η	„ 0·090, „ 156·38		

The present appears to be a good opportunity for giving the tidal constituents which were calculated by Mr. Roberts for the Port of Tuticorin, from observations taken there in the year 1871-72, by Captain Branfill, with a self-registering tide-gauge similar to those employed in the Gulf of Cutch.

Short-period Tides at Tuticorin, and their Constants.

	Feet.		Feet.
Star S ...	$R_1=0.039, \epsilon_1=108.78$	Star P ...	$R_1=0.064, \epsilon_1=281.78$
	$R_2=0.429, \epsilon_2=95.59$	" J ...	$R_1=0.011, \epsilon_1=181.70$
	$R_4=0.073, \epsilon_4=282.65$	" K ...	$R_1=0.274, \epsilon_1=132.90$
	$R_6=0.003, \epsilon_6=51.34$	" Q ...	$R_1=0.143, \epsilon_1=116.25$
	$R_8=0.007, \epsilon_8=262.75$	" Q ...	$R_1=0.032, \epsilon_1=359.08$
Star M ...	$R_1=0.006, \epsilon_1=234.64$	" L ...	$R_1=0.030, \epsilon_1=242.50$
	$R_2=0.596, \epsilon_2=55.81$	" N ...	$R_1=0.072, \epsilon_1=35.69$
	$R_3=0.015, \epsilon_3=182.86$	" λ ...	$R_1=0.019, \epsilon_1=248.45$
	$R_4=0.022, \epsilon_4=192.76$	" ν ...	$R_1=0.022, \epsilon_1=35.58$
	$R_6=0.010, \epsilon_6=45.91$	" μ ...	$R_1=0.016, \epsilon_1=193.83$
Star O ...	$R_8=0.004, \epsilon_8=319.74$	" 2SM ...	$R_1=0.011, \epsilon_1=246.37$
	$R_1=0.112, \epsilon_1=314.25$	" MS ...	$R_1=0.018, \epsilon_1=252.99$

Long-period Tides at Tuticorin, and their Constants.

	Feet
Lunar monthly ...	$R=0.024, \epsilon=313.15$
Lunar fortnightly ...	" 0.065, " 69.54
Luni-solar fortnightly ...	" 0.016, " 307.85
Solar annual ...	" 0.399, " 313.35
Solar semi-annual ...	" 0.080, " 87.50

Here there were no data for evaluating the atmospheric tides separately, and it is probable that the magnitude of the amplitude of the solar annual tide is in great measure due to atmospheric influences.

PROGRAMME OF FUTURE OPERATIONS.

The following important orders on the systematic record of tidal observations at selected points on the Coasts of India, were issued by the Government of India in the Department of Revenue, Agriculture, and Commerce, under date 4th July, 1877 :—

"The Governor General in Council observes that the great scientific advantages of a systematic record of tidal observations on Indian coasts have frequently been urged upon, and admitted by, the Government of India. Hitherto the efforts in the direction of such a record have been desultory, and in many cases wanting in intelligent guidance and careful selection of the points where the observations should be recorded. Additional importance has recently been given to the subject by the institution of a Marine Survey Department, for whose operations accurate tidal observations are a

necessity, without which no permanent record of the changes of ground in the different harbours of the coast can be kept up.

"2. The advantages to be expected from well-considered and carefully conducted observations of the tides are mainly the following :

"(1) They enable standards to be fixed for the purposes of survey.

"(2) They afford data for the calculation of the rise and fall of the tides, and thus subserve the purposes of navigation.

"(3) They are of scientific interest apart from their practical usefulness as stated above.

"The first two of these advantages are of strictly local bearing : an accurate survey of a port is essential to the safety of the shipping frequenting it, and correct tide-tables are necessary for the convenience of navigators and for engineering purposes within the port itself.

"3. The Governor General in Council is of opinion that, in view of these considerations, every port where a tide-gauge is set up should pay for its establishment and maintenance from port funds. The third object, the scientific results to be expected from the record, will be sufficiently provided for by the appointment by the Government of India of one of its own officers to supervise and control the local observations, and to arrange for their utilization to the utmost extent possible. The charges will thus be divided in a manner appropriate to the advantages to be secured.

"4. His Excellency in Council accordingly resolves to entrust the general superintendence and control of tidal observations upon Indian coasts to Captain Baird, R. E., Deputy Superintendent in the Great Trigonometrical Survey Department, who will be guided in his operations by the orders and advice of the head of that Department. This will involve no new charge upon Imperial Funds, for Captain Baird has for some years past been engaged upon observations of this nature in the Gulf of Cutch and in reduction of the observations in England : the work is of a nature which properly falls within the scope of the operations of the Great Trigonometrical Survey ; and the object of the present change is merely to provide for its extension and systematization under an undivided control. Captain Baird will thus remain a member of the Department, and his operations will form one of the subjects to be treated by the Superintendent in his annual report.

"5. The first duty of the Superintendent will be to instruct Captain Baird to determine, in communication with the Governments of the maritime provinces, the points where observations should be carried out. The necessary gauges (where these do not already exist) will then have to be provided from port funds, and the establishments entertained under the sanction of the Local Governments. It will probably be most convenient that all Captain Baird's communications with the establishments in charge

should pass through the Local Governments, but this point may be settled as may be found most expedient in practice."

In accordance with these orders, enquiries have been, and are being made, with a view to ascertain the ports at which it will be desirable to establish tidal stations. The suitability of a port for this purpose will depend, *first*, on a site being available thereat, on which a self-registering tide-gauge may be erected, so as to be either immediately over the sea, or connected by piping with the sea at some point where there is a depth of not less than 10 to 15 feet of water at the lowest tides; *secondly*, on the presence of a port officer, who will exercise a general supervision over the operations, and correct the clocks of the several self-registering instruments, whenever necessary, either by direct determinations of time, or by arranging to get the true time from the nearest telegraphic office; *thirdly*, on the feasibility of making arrangements for the periodical inspection of the instruments at intervals of not less than six months generally, and more frequently when no officer is resident on the spot to superintend the operations.

So far as has yet been ascertained, the ports which seem likely to answer all the required conditions are Aden, Kurrachee, Bombay, Carwar, Beypore, Paumben, Madras, Vizagapatam, Akyab, Rangoon, and Port Blair. The following ports are believed to be unsuitable: Surat, Mangalore, Cannanore, Cochin, Muttrun, Negapatam, Coconada, False Point, Diamond Harbour, Moulmein, and Mergui.

At Aden a self-registering tide-gauge was erected by the local officers about two years ago; but the registers have been taken in such an unsatisfactory manner that the results are not of the slightest use. Captain Baird is now arranging for the establishment of a tidal station there, with proper instruments, and trained men to take charge of them. At Kurrachee a tide-gauge, which was originally set up by Mr. Parkes, has been in work for several years, and has furnished the data from which tide-tables for the port have been computed annually by Mr. Parkes. In course of time the present gauge—the scale of which is very small—should be replaced by one of those which are used by Captain Baird, and an anemometer and a barometer (both self-registering) should be set up beside the gauge. But it is not desirable to interfere with the working of the present arrangements at Kurrachee until other ports, at which nothing is now being done in the way of tidal observations, are duly provided for. At Bombay, Carwar, and Madras, instruments are now being set up by Captain Baird.

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Part II.—PHYSICAL SCIENCE.

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I. INTRODUCTION.

Among the many useful and important artistic and scientific applications of photography, one of the most valuable is the reproduction by its means, in absolute facsimile, of maps and plans, speedily and cheaply and on any scale—either the same, larger, or smaller. So fully are these advantages appreciated, that most civilized States now possess special photographic studios for the reproduction of maps, plans, &c., for fiscal, military and other purposes.

Before the introduction of lithography, about the beginning of the present century, the only means by which maps, or indeed, pictorial subjects of any kind, could be reproduced, was by engraving on metal plates or on wood, both tedious and expensive methods.

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In accordance with these orders, enquiries have been, and are being made, with a view to ascertain the ports at which it will be desirable to establish tidal stations. The suitability of a port for this purpose will depend, *first*, on a site being available thereat, on which a self-registering tide-gauge may be erected, so as to be either immediately over the sea, or connected by piping with the sea at some point where there is a depth of not less than 10 to 15 feet of water at the lowest tides; *secondly*, on the presence of a port officer, who will exercise a general supervision over the operations, and correct the clocks of the several self-registering instruments, whenever necessary, either by direct determinations of time, or by arranging to get the true time from the nearest telegraphic office; *thirdly*, on the feasibility of making arrangements for the periodical inspection of the instruments at intervals of not less than six months generally, and more frequently when no officer is resident on the spot to superintend the operations.

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should pass through the Local Governments, but this point may be settled as may be found most expedient in practice."

In accordance with these orders, enquiries have been, and are being made, with a view to ascertain the ports at which it will be desirable to establish tidal stations. The suitability of a port for this purpose will depend, *first*, on a site being available thereat, on which a self-registering tide-gauge may be erected, so as to be either immediately over the sea, or connected by piping with the sea at some point where there is a depth of not less than 10 to 15 feet of water at the lowest tides; *secondly*, on the presence of a port officer, who will exercise a general supervision over the operations, and correct the clocks of the several self-registering instruments, whenever necessary, either by direct determinations of time, or by arranging to get the true time from the nearest telegraphic office; *thirdly*, on the feasibility of making arrangements for the periodical inspection of the instruments at intervals of not less than six months generally, and more frequently when no officer is resident on the spot to superintend the operations.

So far as has yet been ascertained, the ports which seem likely to

is now arranging for the establishment of a tidal station there, with proper instruments, and trained men to take charge of them. At Kurrachee a tide-gauge, which was originally set up by Mr. Parkes, has been in work for several years, and has furnished the data from which tide-tables for the port have been computed annually by Mr. Parkes. In course of time the present gauge—the scale of which is very small—should be replaced by one of those which are used by Captain Baird, and an anemometer and a barometer (both self-registering) should be set up beside the gauge. But it is not desirable to interfere with the working of the present arrangements at Kurrachee until other ports, at which nothing is now being done in the way of tidal observations, are duly provided for. At Bombay, Carwar, and Madras, instruments are now being set up by Captain Baird.

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VI.—*The Application of Photography to the Reproduction of Maps and Plans by Photo-mechanical and other processes.*—By CAPT. J. WATERHOUSE, B. S. C., *Assistant Surveyor-General of India.*

This paper was originally submitted to the Geographical Congress at Paris in 1875, but as the Proceedings of the Congress have not been published and the paper may be of interest to Members of the Society, as giving an account of the photographic operations for the reproduction of maps, now so largely employed in this country, I have carefully revised and to a great extent re-written it, so as to bring the information up to date and hope that it may not be considered too much wanting in novelty or too technical for the Journal.

I. INTRODUCTION.

Among the many useful and important artistic and scientific applications of photography, one of the most valuable is the reproduction by its means, in absolute facsimile, of maps and plans, speedily and cheaply and on any scale—either the same, larger, or smaller. So fully are these advantages appreciated, that most civilized States now possess special photographic studios for the reproduction of maps, plans, &c., for fiscal, military and other purposes.

Before the introduction of lithography, about the beginning of the present century, the only means by which maps, or indeed, pictorial subjects of any kind, could be reproduced, was by engraving on metal plates or on wood, both tedious and expensive methods.

With the invention of lithography, a new impetus was given to cartography by the comparative ease with which maps could be produced and multiplied by direct drawing or transfer on stone. The young art was, however, scarcely out of its cradle when Joseph Nicéphore Niepce, of Chalon-sur-Saône, experimenting unsuccessfully in endeavouring to find a substitute for lithographic stone, conceived the happy idea of obtaining images on metal plates by the sole agency of light upon thin films of asphaltum or bitumen of Judæa—and thus produced the first permanent photographs by a method of heliographic engraving, which, with a few modifications, still serves to produce excellent results; and it is worthy of remark in connection with our subject that Niepce's first essays were in reproducing engravings.

Since these first essays of Niepce, the idea of superseding the slow and laborious hand-work of the lithographic draftsman and engraver by the quicker, cheaper and more accurate processes of photography, has been steadily kept in view, and various modes of engraving, both for copper-plate and surface-printing, and of lithography by the aid of photography, as well as other special photo-mechanical processes, have been introduced from time to time with more or less success, till at the present time these methods have taken a high and important position among the graphic arts, and as they steadily progress towards perfection, are rapidly extending their artistic, scientific and industrial applications.

The attention of cartographers was very soon drawn to the advantages that might be gained by the employment of photography for the reproduction of maps and plans, but for some time progress in this direction was hindered by the difficulty of obtaining accurate images, free from the distortions caused by imperfect construction of the photographic lenses then employed. The first serious attempt to carry out the method practically appears to have been made, in 1855, by Colonel Sir Henry James, R. E., Director of the Ordnance Survey of Great Britain and Ireland, with the object of obtaining accurate reductions from the large-scale surveys more expeditiously and with more economy than could be done by means of the pantograph.

The result proved incontestably the great value of photography for this purpose and the enormous saving in time and money that could be effected by its use. The possibility of producing absolutely accurate photographic reductions was questioned in Parliament, but Sir Henry James satisfactorily showed that the employment of photography produced reductions more accurate than could be obtained by any method previously in use; that the maximum amount of error could scarcely be perceived, and was much within the limit of the expansion and contraction of paper under ordinary atmospheric changes—which was all that could be desired.

For some time, however, the use of photography in the Ordnance Survey Office appears to have been limited to obtaining accurate reduced prints for the engravers to trace from on to their copper-plates, and was not extended to producing maps for publication, owing to the expense and comparative slowness of production of photographic silver prints, compared with the lithographic or copper-plate impressions, to say nothing of their want of permanence.

Experiments were next made with some of the so-called carbon processes, then recently discovered in France by Poitevin and first worked in England by Pouncy, with the object of transferring the photographic design at once on to the copper-plate, instead of tracing from the photographs by hand. The results obtained were not very satisfactory and a trial was made of Mr. Asser's photolithographic process, which had been published shortly before. Although this process was not found quite adapted to the purpose intended, the advantages of a method whereby facsimile prints in lithographic ink might be obtained and transferred to zinc or stone, so as to permit of a large number of copies to be printed off as easily as from an ordinary lithographic transfer drawing, and with precisely the same advantages in respect to cheapness and permanence, were obvious; and in 1860, after several trials, Captain A. de Courcy Scott, R. E., who was in charge of the photographic operations at Southampton, perfected the process of photozincography, which has since been employed with so much success and advantage at the Ordnance Survey Office, Southampton, and in this country at the Survey Offices in Calcutta, Dehra Dún, Púna and Madras, as well as at other public and private institutions in other parts of the world.

By a curious coincidence, at the very time when this process was being worked out in England, Mr. W. Osborne, of Melbourne, Australia, independently perfected an almost identically similar process of photolithography, which has been extensively used in the Crown Lands Offices of Victoria and Adelaide for reproducing the maps of the Australian Surveys, and has also been worked commercially by Mr. Osborne in Europe and America.

These two processes, appear to have been the first instances of the practical application of photography to the reproduction and multiplication of maps for publication. They still remain, however, very extensively used, and are by the simplicity, cheapness and rapidity of their operations and the facilities they offer for the reproduction of maps of large size, of greater practical value than other processes which have since been brought forward with the same object, and are perhaps capable of producing finer results within the limits of a single negative.

In India, the ever-increasing wants in the way of communications by rail, road and river, and the rapid extension of irrigation and other

engineering projects, as well as the ordinary military, administrative and fiscal requirements make the early production of accurate maps a matter of very great necessity and importance, and as skilled lithographic draftsmen and engravers are scarcely to be obtained and must be trained as required, or brought from Europe at great expense, the subject of photographic reproduction as a means of quickly producing and publishing copies of the original maps of the Surveys, is much more important in this country than it is in Europe or other countries where skilled cartographic lithographers and engravers are comparatively numerous.

The success that had attended the introduction of photography at the Ordnance Survey Office for the reproduction and reduction of maps immediately attracted the notice of the Surveyor General of India, and the services of two trained sappers, with the necessary apparatus, having been obtained from England, a small beginning was made in Calcutta in 1862. Owing to difficulties experienced in working photolithography in the peculiar climate of Calcutta, and the unsuitability of the original maps for reproduction by the process, owing to their being coloured and brush-shaded, little advance was made in the practical working of photolithography or photozincography in India till 1865, when Mr. J. B. N. Hennessey, of the Great Trigonometrical Survey, who had devoted part of his furlough in England to going through a practical course of instruction in photozincography at the Ordnance Survey Office, Southampton, fairly established the process at the Office of the Superintendent of the Great Trigonometrical Survey at Dehra Dún. I and other officers of the Survey Department were trained under Mr. Hennessey, and, in 1867, photozincography was finally started in Calcutta by Capt. A. B. Melville, who officiated for me during my absence on furlough, and since 1869 it has been carried on under my own supervision. Photozincographic offices have also been established under the Bombay Government at Púna, and at the Revenue Survey Office in Madras for the reproduction of the maps of the Revenue and Settlement Surveys in those Presidencies as well as miscellaneous work for other departments. In both of these offices the Southampton process of photozincography is used with a few modifications, but in Madras photolithography is also used with equally good results, and is, I am told, preferred for very fine work.

Before the introduction of photography the publication of the results of the Surveys by the Surveyor General's Office could only be accomplished by the ordinary methods of lithography and engraving; and though much good work was done in the former manner by the very limited native agency available in this country, many maps had to be sent to England to be lithographed, while the whole of the engraving connected with the Atlas of India, on the scale of 4 miles to one inch, was done in England under considerable disadvantages. Even with this help it was found quite impossible that

the publication could keep pace with the surveys, and the consequence was that the record rooms became filled with valuable materials that often could not be turned to practical account till they had become antiquated and out of date. Now, on the contrary, by the aid of photozincography, the publishing branches are able to keep pace with the progress of the Surveys so closely that as a rule each season's mapping of all the 1-inch Topographical and some of the Revenue Surveys is reproduced and published before the drawing of the following season's maps is taken in hand. An immense amount of work is thus done that could never have been undertaken by lithography and engraving alone, even though the transfer of the engraving of the Atlas of India to Calcutta has greatly facilitated the early publication of the latest additions to the Atlas year by year. And not only are the ordinary departmental publications thus hastened, but a very large number of miscellaneous maps and drawings are reproduced specially for the use of other departments of the public service.

The following table of the work executed by the Photographic Branch of the Surveyor General's Office, Calcutta, during the year 1877, will give an idea of the very large extent to which photography is being used for the reproduction and publication of the results of the Imperial Surveys and other miscellaneous demands.

	Sections or Sheets.	Negative Plates.	Carbon Prints.	Silver Prints.	Photo :—Transfer Prints.	Transfers to Zinc or Stone.	Number of Pulls.	Number of Sheets Printed.
Topographical Maps,	167	272	..	218	241	106	20,775	21,215
Revenue Survey Maps,	233	263	..	..	297	71	22,370	18,320
District Maps,	6	22	..	..	8	3	6,864	5,084
General Maps,	42	199	..	46	176	44	9,359	6,629
City and Cantonment Plans,	59	104	..	63	122	37	8,580	8,580
Miscellaneous Maps, &c., ..	362	510	..	536	507	190	57,138	82,515
Proofs, .....	..	..	..	..	..	..	5,932	..
Photos. of Life Convicts, ..	..	..	348	..	..	..	..	..
Cadastral Maps, Bengal, ..	56	..	..	..	..	56	2,800	2,800
Total,	925	1,370	348	863	1,351	507	133,618	145,143
Cadastral Maps, N. W. P.,	2,113	3,973	..	..	4,047	2,218	99,450	99,450
Grand Total,	3,038	5,343	348	863	5,398	2,725	233,068	244,593

* 20,962.00 square feet.

† 22,027.40 square feet.

In the Great Trigonometrical Survey Office at Dehra Dún, during the year 1876-77, 117 maps and 80 charts, besides miscellaneous diagrams were photographed, and 25,529 copies printed from them; 297 blue prints and silver prints were also made.

At the Govt. Photozincographic Office, Púna, during the same year, the number of negatives taken was 2,745, the number of maps photozincographed was 1,798, and the number of copies printed off (including copies of 79 lithographs) was 74,739. Since the formation of the office, in 1867, to the present time 9,100 maps have been photozincographed.

The specific advantages to be gained by the use of photography for the reproduction of maps and plans are :

1. Rapidity of production and multiplication, especially when employed for copying subjects containing close and intricate details. The gain varies according to the amount of detail and the time that would be taken by a skilled draughtsman or engraver to make the copy by hand. For instance, a highly finished map that would take several months to lithograph or engrave, may by the aid of photography be copied and some hundreds of copies printed off within a week.

2. The perfect fidelity with which the most delicately minute and intricate details are copied. The most skilful and careful draughtsman is liable to make errors in copying, and never can attain the same accuracy of delineation, especially of minute objects, as is obtained with the camera.

3. The facility with which copies may be obtained on scales larger or smaller than the original. The extent to which this may be taken advantage of depends very much upon the object in view as well as upon the style of the original, and the relative thickness and size of the lines and details composing it; but notwithstanding certain drawbacks and inconveniences it may sometimes be attended with, this facility of enlarging or reducing the scale of an original drawing with the most perfect accuracy and with the absence of all personal error, is one of the most important advantages of photography, and its immense superiority in this respect over the pentagraph and other methods has been proved to be beyond question.

4. The comparative cheapness of the photographic methods. The relative cost of hand labour and photography is affected by several considerations, *e. g.*, the nature of the subject, the process employed, the number of copies made and the pay of the photographers as compared with that of draughtsmen. In most cases it will be found that when it is really an advantage to employ photography in reproducing maps for any particular purpose, the cost will be far less than it would be by employing hand labour.

Notwithstanding these advantages, the use of photography as a means of reproducing maps and plans for publication has not extended so much as

might have been expected, partly on account of defects inherent in photographic copying, and only to be overcome by great skill and long experience on the part of the photographer, and partly owing to the difficulty of making draughtsmen fully understand the requirements to be fulfilled when preparing maps to be reproduced by photography for publication, in order to produce satisfactory results, and that they must strictly refrain from using colour and draw the map neatly in black and white, so that every line may be reproduced of its proper strength, according as the map is to be copied on the same scale as the original or to be reduced.

It matters little how roughly drawn or highly coloured an original drawing or map may be, if it is intended to lithograph or engrave it, because a skilled lithographer or engraver can easily put it into proper and conventional form; but when such a drawing is handed to the photographer he can only produce a facsimile of it with all its deficiencies—the coloured details hidden under a black mass of shade, the finer parts perhaps wanting altogether, the writing rough and broken, or so small as to be almost invisible, besides other defects caused by the unsuitableness of the drawing for reproduction by photography, and these defects are liable to be unduly attributed to the process.

These difficulties were felt in all their force when it was first determined to introduce photozincography for the publication of the maps of the Imperial Indian Surveys, because till that time these maps had been drawn in a very delicate, highly finished style, with many of the details on them coloured and the hill features shown by brush shading. It was soon seen that an entire change of style was necessary and that the original maps prepared specially for photographic reproduction, must be drawn in pen and ink lines alone, without colour or brush-shading. It was some time before the desired results were obtained, but after several years' experience a high degree of excellence has been attained in the preparation of original maps suitable for photographic reproduction, and now all maps of the above Surveys and most of the miscellaneous maps and drawings received from other departments are drawn with this object.

The change of style has been regretted by some as spoiling the beauty and finish of the maps, and the want of colour certainly has some drawbacks, but there can be no doubt that the necessity for drawing the original maps so that they may be fit for immediate publication has effected here, as it has also been found to do wherever photozincography or photolithography has been introduced, an immense improvement in the style of drawing of the manuscript maps as well as in the accurate delineation of the ground. The photozincographed copies as a rule appear somewhat coarse and rough when compared with good lithographs or engravings, but they possess the great advantage of being produced quickly and cheaply; while

being absolute facsimiles of the original maps submitted by the surveyors, they are entirely free from the errors that even the most careful draughtsman is liable to make when copying by hand, and they faithfully preserve the appearance and character of the ground exactly as delineated by the surveyor.

In most foreign topographical establishments, I believe, the principal use of photography is for making reductions, and not so much for the reproduction of maps on the same scale as the originals. In India, however, photozincography is very largely used for full-scale reproductions. Thus, the whole of the standard maps of the Topographical Surveys on the scale of 1-inch to the mile and the Cadastral village maps of the Revenue Survey, on the scales of 32 inches to the mile, for Bengal, and 16 inches to the mile, for the N.-W. Provinces, are reproduced on the same scale and are not reduced for publication on any smaller scale. In some cases, however, the surveys are made and drawn on the scale of two inches to a mile and are then reduced to one-inch, with a great improvement in the general appearance of the finished maps—reductions always appearing sharper and more highly finished than reproductions to scale. Some of the maps of the Revenue Surveys are reduced to the standard scale of 1-inch to the mile by a double reduction from the maps on the original scale of survey—4 inches to the mile. These are first photozincographed, in sections of convenient size, on the reduced scale of 2 inches to the mile and some prints are struck off in blue ink. Upon these blue prints, the draughtsman re-draws the map in a style suitable for a further reduction to one-half, leaving out all details not required on the 1-inch map and generalising the hill features, &c., so as to produce a proper effect when reduced. By the use of these blue prints, the labour of making a piecemeal reduction with the pantograph is saved, and the draughtsman can produce a more accurate result.

Silver print reductions to one-fourth of the standard 1-inch maps are made for the use of the engravers in preparing the sheets of the Atlas of India on the quarter-inch scale.

In the Photozincographic Offices at Puna and Madras more use appears to be made of reduction for the village maps than in the Calcutta Office.

The photographic processes applicable to the reproduction of maps are :

I.—*Photographic printing on Sensitive Papers.* In these methods prints are obtained on a sensitive surface of paper prepared with the salts of silver, platinum and iron, or with certain salts of chromium in conjunction with pigmented gelatine. In all of them the whole of the photographic operations connected with the printing have to be repeated for every impression.

II.—*Photo-lithography* or *Photo-zincography*, or the methods by which photographic image in greasy ink may be produced on, or transferred to, a lithographic stone or zinc plate and printed off in the lithographic press. The photographic operations cease with the production of the image in greasy ink, and the impressions are produced by the ordinary operations of lithographic printing. The use of these processes is, however, limited to the reproduction of subjects in line or dot, as they can only reproduce half tones in a very imperfect manner.

III.—*Photo-collotype*, or the method of producing a photographic image on a layer of gelatine applied on a suitable support, so that when the gelatine surface is moistened, impressions may be obtained from it in printing ink. By this method, also, a photographic image once produced on the printing surface of gelatine is capable of yielding some hundreds of impressions in the printing press; and instead of the subjects for reproduction being confined to those in dot or line, as in photo-zincography, any subject can be copied which is capable of giving a good photograph by the ordinary process of silver printing.

IV.—*Woodbury-type*, or the method whereby a photographic image is impressed into a soft metal plate, somewhat in the same manner as in the operation of nature-printing, forming a mould into which liquid coloured gelatine is poured and attached under pressure to a sheet of paper, thus yielding an image in which the lights and shades of the picture are formed by different thicknesses of coloured gelatine.

V.—*Heliography* or *Photo-engraving*, the method of obtaining on a metal plate a photographic image in intaglio capable of giving impressions in the copper-plate press. In this method the engraved plate once obtained serves for the impression of a large number of copies and may be indefinitely multiplied by electrotyping.

VI.—*Photo-typography*, or the method of obtaining by means of photography an image in relief on a metal plate, which may be mounted on a block to be set up with type and be printed in the ordinary printing press. These blocks may also be indefinitely multiplied by electrotyping in the same manner as ordinary woodcuts.

It will be observed that the five last-named processes all possess the great advantage that, once the photographic image has been obtained on the printing surface, the operations of printing can be accomplished by the same means and at the same rate as by the ordinary industrial methods. The printing may be performed by night or by day, quite independently of the agency of light, and requires no further chemical manipulations.

It would be beyond the scope of this paper to enter fully into the practical details of these various processes of photographic printing, as my object is merely to review those applicable to cartographic pur-

poses, and to give a summary of the principal methods that may be usefully employed with reference to the wants of the State or of private individuals, rather than to those of professional cartographers and map-publishers, though the latter may in many cases also find photography a useful auxiliary. Photographic methods can never entirely take the place of lithography or engraving by hand, either for public or private purposes, but their use may be advantageously extended. Those who wish for fuller details may consult the text-books by Abney, Carey Lea, Monckhoven, Vogel and others, and the special works referred to in this paper.

II. PREPARATION OF THE ORIGINAL DRAWING.

I have already adverted to the difficulty that has been found in this country and elsewhere in obtaining original drawings suitable for reproduction by photozincography, and to the fact that without a proper original drawing it is quite impossible to produce satisfactory results. Besides its principal use in reproducing maps of the Surveys, photozincography is very largely utilised in India by engineers for the reproduction of their plans and drawings, and by other public officers for an immense variety of miscellaneous maps and plans, and as we were constantly asked to photozincograph subjects utterly unsuitable to the process, a set of rules for the preparation of the original drawings for reproduction by photozincography was drawn up under General Thuillier's direction and published in the official Gazettes all over India, and the result has been a great improvement in the execution of the drawings we receive for reproduction.

The rules are as follows:—

1. All drawings should be on white, smooth-surfaced paper, free from dirt, pencil marks, creases and wrinkles. When possible they should remain stretched on the drawing-board.
2. The Indian ink should be freshly rubbed down and give good *black* lines, free from glaze.
3. The lines should be firm and cleanly drawn—not too fine or too close together. They must be quite *black*, and light effects must be produced by fine and open black lines, and never by the use of *pale* ink. Thick lines in the printing and borders of maps should be well filled in. Pencil marks should be carefully removed, so as not to injure the blackness and firmness of the lines.
4. All cross-hatching and shading should be as open and clear as possible, and the lines composing it firm and not too fine. Intensity of shade must be shown rather by an increase in the thickness of the lines than by placing them closer together, in order that the intermediate spaces may not become blocked up when transferred to zinc. It is better not to rule the shading of mechanical and architectural section-drawings, but to

show the shaded parts by a light tint of blue, violet, or *aniline* red (fuschine or roseine). These parts will reproduce white, and can have a ruled tint transferred on the stone or zinc in the usual way, which will give a much neater appearance.

5. In plans or drawings intended for photozincography, *washes* of any colour except very pale blue, violet, or aniline red, are absolutely inadmissible. Outlines, may, however, be drawn, if necessary, in any strong red, brown, yellow, orange or green pigment which will reproduce black. Any details required to be shown in the original, but not in the copy, may be drawn in pale blue, violet, or aniline red. Details that are not required to be reproduced may be painted out with Chinese white.

6. River courses, lakes and tanks should be left blank, and not filled in with fine lines. They may be indicated by a pale wash of *blue* without detriment to their reproduction.

7. When drawings are to be reduced care must be taken to draw the lines, lettering, and detail of sufficient thickness and size relatively to the scale of reduction, so that they may not be lost or illegible when reduced. Sufficient space must also be left between the lines to prevent subsequent blocking up.

8. When possible, drawings should be made on a larger scale than they are required to be copied. Photographic reductions are always sharper and firmer than reproductions to the same scale, and defects in drawing are lessened by reduction.

9. Where plans or drawings to scale are to be reduced, the scale should be given in terms of a single unit of measurement and not as relative to any second unit. Thus, the scale on a map drawn on the scale of 4 miles to an inch for reduction to 16 miles to an inch, should be shown simply as a "scale of miles."

10. As photography produces a more or less perfect *facsimile* of the original drawing, it is essential that drawings intended for publication should be complete and finished in every respect before they are made over to the photographer. The drawing, printing of names, &c., should be in as neat a style as possible, and not require to be altered or touched up. The hair-strokes of the printing should not be too fine.

The foregoing rules may be summed up in a few words :—WHITE-PAPER, BLACK-INK, and FIRM OPEN DRAWING ; and as success in the after processes depends entirely upon the perfection of the original drawing and its capability of giving a negative on which the ground is perfectly opaque while the lines are quite clear and as transparent as the bare glass, these essentials must be most carefully observed. Their neglect will entail failure and disappointment.

For drawings intended for reproduction by the collotype methods these

rules are equally applicable, especially No. 7, and there is even more necessity for perfect cleanliness of the paper and neatness and finish of the drawing, because the faintest tints will be reproduced by the gelatine printing surface and corrections cannot be made on it, as they can on zinc, stone or copper. For this reason also, the greatest care must be taken to complete the drawing in every respect before it is given to be reproduced. Drawings in line may be finer and more delicate than for photolithography, but still must not be so fine as to interfere with the obtaining of a perfectly dense and opaque negative, otherwise the ground of the print will appear dirty and stained. Pale ink may be used when necessary for effect, but not more than is really requisite. Colour may be used to any extent, having always due regard to the photographic effect when reproduced. On account of the difficulty of photographing certain colours so as to produce the same effect as in the original picture, the best results will be produced from drawings specially prepared in monochrome, such as Indian ink or sepia.

In the case of drawings for any special purpose or not intended for publication, the above rules may be relaxed, but the general principles laid down should be observed, as far as practicable, if the best results are desired.

When drawings are prepared specially for photographic reproduction, there need be no difficulty in taking all the precautions necessary for producing good results. It often happens, however, that the photographer is called upon to reproduce drawings, lithographs, or old MSS., printed records, or engravings, which either may never have been suitable for the purpose, or, if suitable when fresh, have become dirty and stained by age. Herr Seamoni, the skilful Chief of the Photographic Department of the Imperial State Paper Office at St. Petersburg, has given some useful hints on the treatment of such subjects under these circumstances.*

"Yellow, or otherwise objectionable, spots should be carefully covered over in the spaces between the lines with Chinese white, and whenever possible the lines should be strengthened in parts where they appear weak."

"Lithographs and engravings may be bleached, by immersion in a solution of chloride of lime, or *Eau de Javelle*, (1 to 10 or 15 of water), then soaked in water for some hours, after which they are treated with a weak solution of hyposulphite of soda and finally well rinsed in clean water."

"Fresh grease stains may be removed with chloroform, benzine and ether, or with a weak alkaline solution of caustic potash or its carbonate."

"Old grease stains may be removed with a more or less strong solution of potash, applied at the back of the subject."

* *Handbuch der Heliographie*, p. 67.

"Iron mould and ink spots may be taken out with a solution of oxalic acid or salts of sorrel."

When tracings are made on paper or vellum cloth to be reproduced without the aid of the camera, special care must be taken to keep the back of the drawing clean, and to choose paper or cloth free from stains and of as even a texture as possible.

Originals drawn on rough paper may be smoothed in a copper plate press, and, if dirty, should be carefully cleaned with india-rubber or bread.

III. THE PRODUCTION OF THE NEGATIVE.

After the due preparation of the original, the production of the negative is a point of the utmost importance, and may well be considered by itself before proceeding to the consideration of the various processes of photographic printing.

In order to obtain the most satisfactory results for photolithography, photozincography, or any other process specially applicable to line subjects, the negative must be perfectly sharp all over, free from distortion and possess the greatest amount of contrast between the lines and the ground. If care is taken to produce good negatives from suitable originals, results may be obtained which will compare with ordinary lithographs and engravings for sharpness and delicacy. The difference in the results of working with good negatives or bad ones is incredible; with a good negative from a good original every thing works well, but with a bad negative from a faulty original all kinds of difficulties may be encountered, and the attainment of a passable result is almost a matter of chance.

The first thing is to arrange the plan so that it may be copied without any distortion and be quite sharp all over.

To ensure freedom from distortion, the lens employed must give an image quite free from all curvature of the marginal lines of a rectangle. In practice the most suitable forms have been found to be the 'Rectilinear' of Dallmeyer; the 'Doublet' of Ross; 'Aplanatic' of Steinheil and others on the same principle. The lenses known as triple combinations are also good. In the Surveyor General's Office, Calcutta, Dallmeyer's Rapid Rectilinears are used and found to answer well. The lens should be worked well within its power, so as to use the most central rays; and to secure the sharpness of the image all over the plate, a small stop or diaphragm should be used.

The plan must be placed so as to be evenly illuminated by a good strong light falling as horizontally as possible, in order to avoid shadows being thrown by the grain of the paper, and thus diminishing the even opacity of the ground of the negative.

The apparatus for supporting the plans varies according to the nature of the work required, and may either be a perfectly smooth board fixed permanently in a truly vertical position against a wall or other support, a form which is very suitable when large plans have to be copied or reduced; or it may consist of a frame large enough to take a certain size of map and capable of being adjusted in various ways so as to move up and down in a vertical plane or horizontally right and left, so that different parts of the plan may be brought in front of the camera without moving the plan on the board.* In any case, arrangements must exist, either in the plan-board or in the camera-stand, for making the plane of the map or plan to be copied exactly parallel to the plane of the sensitive plate in the camera.

The map must be attached to the plan-board so that it may lie perfectly flat and free from ridges. This is best secured by placing in front of it a sheet of glass which is fastened down on the board with pins at the corners. Or a glazed frame may be used for holding plans of a medium size. In either of these cases care must be taken to avoid any reflection from light objects in front of the plan-board.

It is convenient to have the plan-board and the focussing glass of the camera ruled in squares of 1 inch or other convenient size, in order to at once test the perfect parallelism of the sensitive plate and the plan-board.

When the work is confined to the reproduction or reduction of maps or other subjects of one fixed size on a single plate, it will be found convenient to draw a rectangle of the required size on the ground glass of the camera. When the image of the subject exactly fills this rectangle the adjustments of focus and parallelism will be correct.

The camera used for reproduction to scale should be at least of sufficient length to draw out to twice the equivalent focal length of the largest lens it is to be used with, and may be furnished with cone fronts to give further extension if necessary. With large cameras of a long range of focus it will be found convenient to have the back part of the camera fixed and the front part carrying the lens moveable, so as to enable the operator to focus conveniently. The camera may be fixed on a stand furnished with adjustments for moving it horizontally right or left, and have a tilting motion up and down, in order to adjust the camera perfectly level, or tilt it slightly so as to correct any want of verticality of the plan-board. The camera-stand should run upon rails fixed in the ground at right angles to the wall carrying the plan-board, thus enabling the distance of the camera from the plan-board to be easily and accurately adjusted according to the scale required. When using a reversing mirror or prism for taking re-

* See my '*Report on the Cartographic Applications of Photography*,' plates V, VII and X, and Sir H. James' '*Photozincography*,' plates I and II.

versed negatives for collotype and other purposes, it is a good plan, when possible, to have an arrangement for laying the plan horizontally under the lens at any convenient distance from it.

The whole of the apparatus connected with the camera and plan-board must be rigid and firmly fixed, so as to be free from vibration. The slightest vibration is sufficient to destroy the perfect sharpness of the image. In the glass-house attached to the Photographic Branch of the Surveyor General's Office here, I have endeavoured, and I think with success, to overcome all vibration caused by carriages passing in the street close by, by dividing the floor of the camera-room into isolated blocks resting on a bed of sand, so that each camera shall stand by itself on a block isolated from adjoining blocks and from the walls and floor of the building. The plan-boards are fixed on a separate wall quite isolated from the walls of the building.

Plans may be copied either in the open air or under shelter—coloured and old stained manuscripts, maps or drawings are better copied in full sunlight. The glass-house I have constructed at the Surveyor General's Office faces the south and is glazed with ground glass, so that a strong diffused light may be thrown upon the plan-boards. When circumstances permit, it is well to have the camera and plan-board mounted on a firm stand working on a pivot, so that, as the day wears on, the position of the plan-boards may be changed so as always to face the sun. I adopted this arrangement at the Trigonometrical Survey Office, Dehra Dun, and I believe it has many advantages over the fixed glass-house rendered necessary in Calcutta by the constant wind and dust, and the greater necessity of being able to carry on work without interruption at all times of the year.

The negatives of maps &c., drawn in line only, for reproduction by photozincography, are taken by the ordinary wet collodion process with iron development, modified so as to secure the greatest transparence in the lines and density of the ground; but as the ordinary wet collodion process by itself will not give all the intensity required to produce an almost opaque ground, it is obtained by intensifying the negative in the usual way with pyrogallie acid and silver, after fixing; then treating it with a saturated solution of bichloride of mercury till the film becomes white, and finally applying a dilute solution of hydrosulphate of ammonia, which instantly changes the colour of the film to a dense black or brown throughout. The negative is afterwards varnished with a resinous varnish, or flowed over, while wet, with a solution of gum or gelatine and allowed to dry. All defects, pin-marks &c., are then stopped out with Indian ink or black varnish. In taking the large negatives on plates 32×24 , that we are now producing for copying the maps of the Cadastral Surveys, it has been found that the first intensification may be produced by washing the plate after the first develop-

ment and applying a weak solution of nitrate of silver followed by a second application of the iron developer.

Other methods of obtaining the extra density required for these negatives have been proposed and are in use,* but, notwithstanding several inconveniences arising from the use of bichloride of mercury and hydrosulphate of ammonia, the above appears to be the best and most certain when working on the large scale.

When maps are not drawn entirely in pen and ink but have the hills brush shaded, and it is desired to reproduce them by the colotype or engraving processes, great care and skill are required on the part of the photographer to get the ground of the negative dense enough to give a perfectly clean impression in the white parts of the map, and at the same time prevent the grain of the paper from showing and give the faintest tints of the shading their proper value. Coloured maps also give a good deal of trouble, and when allowable the colour should be washed off as much as possible before the negatives are taken. Colours may sometimes be removed by chemical means, but there is risk of injury to the original.

In many of the processes about to be described it is necessary to use a negative which instead of giving an image reading the same way as the original shall give it reversed as to right and left. There are several methods of obtaining these reversed negatives.

(1.) By coating the original unreversed negative with a thick transfer collodion,† or a layer of gelatine, and then stripping off the film and, either laying it down again on a sheet of glass in a reversed position, or using it as a film negative which may be used for giving both reversed or unreversed images. This method is practical and useful, but is not suitable for map work on account of the liability to contraction and distortion of the image. There is also difficulty in keeping the film negatives flat, and they have been found to become brittle and perish very soon in this climate.

(2.) By turning the sensitive plate in the camera, so that the light acts, through the glass, on the back surface of the film. This method is also practical, simple and useful, but requires care in the selection of glass plates free from scratches, &c., and in wiping the back of the plate before it is put in the camera. It is used in the Belgian Topographical Bureau with dry tannin plates, but I have not found it suitable for reproducing very fine map-work on wet plates.

(3.) By placing a reversing mirror or prism in front of the lens—the image thus passes through the lens reversed and is impressed directly on the sensitive plate. This is one of the simplest and most effectual of all methods. If a mirror is used it should be one silvered by depositing silver

* See Abney, *Instruction in Photography*, p. 22.

† See the same work, p. 160.

on the front surface and should be large enough not to cut off the oblique rays entering the lens. A large solid reversing prism is expensive and heavy, but for moderate sizes an efficient instrument may be made by building up a hollow prism with glass plates and filling it with a transparent fluid having a suitable index of refraction. M. Derogy, of Paris, has just invented an ingenious and economical method of employing a reversing prism by placing a small prism between the lenses. I have not seen any results of this arrangement, but it seems likely to be as effective as it is simple.

(4.) By what is known as the 'dusting on' or 'powder' process. A glass plate is coated with a mixture of gum, sugar and bichromate of potash dissolved in water, thoroughly dried with heat, and then exposed to light under a negative. After removal from the printing frame, the gummy film is dusted over with very fine plumbago which adheres to it in inverse proportion to the action of light, *i. e.*, those parts on which the light has acted refuse the powder in proportion to the intensity of the action of light, while the protected parts, attracting moisture from the air and so becoming 'tacky,' take the powder readily, and thus an exact transcript of the original negative is produced, but reversed. This method is simple and effective and seems to be one of the best that can be employed when a mirror or prism is not available, or when, as is frequently the case, the reversed negative can only be obtained by copying from a single original unreversed negative.

(5.) By making a copy, either in the camera or by contact, on a film of collodio-bromide of silver. The image is developed as usual by the alkaline method, and then treated with nitric acid which dissolves the reduced silver in the exposed parts of the film, leaving the bromide in the unexposed parts; the plate is then again exposed to light and developed. This method, proposed, I believe, by the late Mr. Sutton, is said to give very good results, but the use of nitric acid is an obvious disadvantage.

(6.) By copying in the camera, first making a transmitted positive either by the collodion process or with a special pigmented gelatine tissue. This method is most useful when the reversed negative is required to be either larger or smaller than the original.

(7.) By means of the reversing action of the red and blue rays of the spectrum. This method is a discovery of my own and has not yet been thoroughly worked out; it is, however, simple and could, I believe, be successfully utilised. A film of collodio-bromide of silver stained with anilin blue is exposed to light for a few moments, then placed under a negative in a printing frame in front of which is a sheet of red glass, and exposed to light. The action of the light passing through the red glass in the clear part of the negative is to neutralise or destroy the effect of the previous exposure of the plate to light, and on development a more or less perfect reversed

negative image is obtained. For line subjects a blue glass may also be used, but for half-tone work only a red glass can be employed.

In some processes also, it is convenient to use either direct or reversed transparent positives instead of negatives. These can be obtained either by contact printing on dry collodion plates or gelatine tissue, or in the camera, in the manner adopted for making transparencies, as described in the text-books.

Having now described the preliminary operations for preparing the original and producing the negative, which are common to all processes, we may proceed to the consideration of the different printing processes which, as stated in the introduction, may be divided into 6 classes, *viz.* :

I. Printing on sensitive papers. II. Photo-lithography or Photo-zincography. III. Photo-collotype. IV. Woodbury-type. V. Heliography or Photo-engraving. VI. Photo-typography.

IV. PHOTOGRAPHIC PRINTING ON SENSITIVE PAPERS.

The processes under this head may be divided into three classes—

First:—Those in which the sensitive papers are prepared with salts of silver and the results are not permanent.

Secondly:—Those in which the sensitive papers are prepared with the salts of iron, platinum and other metals, and the prints though not absolutely permanent are more so than silver prints.

Thirdly:—Those in which coloured gelatine or other colloid mixed with an alkaline bichromate forms the sensitive surface and yields prints which, for all practical purposes, may be considered perfectly permanent.

Silver-printing.—Notwithstanding its expensiveness and the want of permanence of the prints, silver printing has hitherto maintained the first place among photographic printing processes, and though very nearly equalled, is as yet unsurpassed for the beauty and delicacy of its results. It is the process in most extensive use for producing copies of portraits and views, and although rapid advances are being made in more permanent methods, it is likely to be a long time before the beautiful but perishable silver print is entirely superseded.

The following brief outline of the operations will be sufficient to show the nature of the process.*

A sheet of paper coated with albumen containing an alkaline chloride, such as common salt, or paper which has merely been immersed in a solution of such salt and dried, is floated on a solution of nitrate of silver and allowed to dry in the dark. It is then placed above the negative in a copying frame, which is so constructed that the light may pass freely through the negative, and at the same time may admit of the examination

* For details, see Abney's *Instruction in Photography*, p. 113.

of the print while the back surface of the sensitive paper is shielded from light. The exposure to light lasts for some minutes, by which the parts unprotected by the denser parts of the negative are darkened more or less, according to its translucency, while the parts entirely shielded from the light remain quite white. When the action of the light is judged sufficient, the sensitive paper is removed from the frame in a dark place, and must then undergo an operation of *fixing* to remove the unchanged salts of silver, which would cause the print to darken unless carefully protected from the light. This is effected by steeping the print for a short time in a solution of hyposulphite of soda; but before the print undergoes this indispensable operation it is usual to place it in a solution of chloride of gold, by which part of the reduced silver forming the image is replaced by a film of gold and the print takes a more agreeable tone, also becoming more permanent than it would be if this operation, called 'toning,' were omitted. It is, however, impossible to ensure perfect permanency of these prints, by reason of the sulphur contained in the albumen or in traces of sulphur salts formed by the decomposition of the hyposulphite of soda, and left in the print after even the most careful washing, slowly acting on the reduced silver forming the image and converting it into a sulphide, by which the tone and brilliancy of the picture are lost, and the lighter shades appear to fade away entirely. It should, however, be stated that prints prepared on plain, or unalbumenised, paper are more permanent than the albumenised prints, though not so brilliant, sharp and delicate; and they have the further advantage of being less liable to shrinkage and distortion than the albumenised prints, and are thus more suitable for the reproduction of maps where accuracy of scale is a desideratum.

It is evident that owing to the expensiveness of the materials used in producing these prints and their want of permanency, together with the slow rate at which they can be produced, this process is almost useless for the reproduction of maps in large numbers; and, in fact, its use in cartography is limited to making copies of special maps for immediate reference or temporary purposes, and as guides for engravers or lithographers in preparing compilations from maps on a larger scale. Silver prints have also been used by engravers to obtain a correct tracing on the waxed surface of their copper plates, but unless these prints are prepared with great care they are open to the objection of becoming distorted and untrue to scale by the contractions and expansions caused by the successive washings they have to undergo. Prints on plain paper are better for this purpose than those on albumenised paper, and prints on paper containing a large proportion of resin in the size are better still.

In the English Ordnance Survey the topographers are furnished with silver-print reductions from the large scale outline survey, on which

they insert the features of the ground, suitably delineated according to the scale.

A very early application of this process has lately been re-introduced in Germany by Herr Romain Talbot, of Berlin, under the title of the *Licht-paus* process, with the object of enabling engineers and others to readily prepare a few copies of their plans without the necessity of using a camera and other expensive appliances. In this method a print on a sensitive chlorised paper, prepared with nitrate of silver and an organic acid, so that it may be kept for some time in stock ready for use, is first taken by exposing it to light under the original drawing itself, which to secure the best results should be drawn in very black ink on thin paper or vellum cloth. This print, on which the lines are clear and the ground opaque, is simply fixed in a solution of hyposulphite of soda and then thoroughly washed and dried. A second copy is now made from this negative print in exactly the same way, and as, this time, the lines darken under the clear parts of the negative and the ground remains clear, we obtain a perfect transcript of the original. This process is said to be largely used in Germany for copying maps and engineering plans. It is no doubt useful in many cases where it is undesirable or impossible to make more extensive photographic arrangements, but besides being limited to the reproduction of copies on the same scale as the original, it labours under the disadvantages of expense and want of permanency common to all the silver printing processes.

In the processes just noticed the exposure to light is usually from 15 to 30 minutes, but in dull weather, or with certain negatives, it may be much longer; it is obvious, therefore, that even under the most favourable conditions comparatively few prints can be produced from a single negative in a day. In order to shorten the exposure and permit prints to be produced with much greater rapidity than with the ordinary process, a method has been introduced by Major Libois of the Belgian army, by which, instead of the image being produced at once in its full strength by the action of light, the latter is only allowed to act for a few seconds, and the full effect is produced by treating the print with a developing agent composed principally of gallic acid, which at once reduces the silver in the parts acted on by the light, and thus produces a visible image in place of the almost invisible one formed by the action of the light alone. This process was extensively used in the *Depôt de la Guerre*, Paris, some years ago, and large numbers of maps were turned out by it, I was told, almost as quickly as they could have been printed in the press, and it had the further advantage that facsimile copies could be made of maps from which good results could not have been obtained by photolithography. The same process was used at the *Depôt de la Guerre* in Brussels, but not on so large a scale. I have also used it with success in India, and it may be recommended in

cases where silver printing is required for maps &c. It is more economical than the ordinary process, and much more rapid in working, the exposure being counted by seconds instead of by minutes. The operations are briefly as follows :

Thin photographic paper is salted by floating on a solution containing 2 per cent each of chloride of ammonium and citrate of soda in water slightly acidified with citric acid. The paper is dried and may be kept for use. It is sensitised by floating in the dark on a bath containing 5 per cent of nitrate of silver acidified with a little citric acid. The exposure to light is conducted in the same way as in the ordinary process, but is exceedingly short—a few seconds to one minute being generally sufficient. When taken from the printing frame only a very feeble image is visible, it is therefore developed in a mixture of a solution of gallic acid (1 to 3800 water) with a solution of acetate of lead (1 to 200 water), to which a little acetic acid is added. The detail gradually strengthens, and in about a quarter of an hour the prints are fully developed and of a good black colour. After being washed they are fixed in a bath of hyposulphite of soda at 30 per cent., then well washed and dried.*

The foregoing are the principal methods of silver printing suitable for cartographic purposes, but, however convenient and useful they may be for special objects where photolithography is not applicable, they cannot be considered adapted for purposes of publication, and their want of permanency is an insuperable defect.

Printing with Salts of Iron.—From time to time attention has been drawn to the possibility of replacing silver-printing by processes depending on the use of the salts of iron and other cheap materials, but, though certainly useful in some respects, they have never been brought into extensive practical use.

One of the best known of these processes is the 'cyanotype', invented by Sir John Herschel, and lately re-introduced by Messrs. Marion & Co., of Paris, who prepare and supply the ferro-prussiate paper ready for use. Good even-textured paper is brushed over with a mixture containing nearly equal proportions of 10 or 12 per cent solutions of ammonio-citrate of iron and the ferridcyanide of potassium, dried and exposed to light under a print or drawing placed with the printed side uppermost. The resulting faint photographic image is developed and fixed by a mere washing in plain water, yielding a print in white or light blue lines on a dark blue ground.

This process is rapid, simple and cheap. The camera is dispensed with, and the only photographic apparatus required is a printing frame and

* Maës and Hannot's *Traité de Topographie et de Reproduction des Cartes au moyen de la Photographie*, p. 295.

one or two dishes or trays. The sensitive paper is easily prepared and can be kept indefinitely in the dark until required for use. There is no messing with chemicals after the preparation of the paper, pure water only being required to develop and fix the prints. The exposure to the light is very short, two or three minutes in the sun being ample to make a clear legible copy from a line negative or from a drawing on tracing cloth. The chemicals employed are both very inexpensive.

The objections to the process are two: first the difficulty of obtaining clear whites; this, however, is of no consequence so long as the details are clearly legible; and secondly, the colour of the prints—white on a dark blue ground. Although this does not interfere with the practical use of the process for special work, it completely prevents it from being employed as a means of multiplying copies of maps or plans on a large scale. Another defect is, the want of sharpness arising from the necessity for placing the reverse side of the original in contact with the sensitive paper in order to get an unreversed print. These objections may be partly obviated by printing from a negative on paper or glass, in which case the lines will be dark blue on a light blue or white ground, but then cameras and other expensive photographic apparatus will be required to produce the negative.

M. H. Pellet has recently recommended a process of this kind whereby prints are obtained in dark lines on a clear ground. Paper is sensitised in a mixture of—

Oxalic acid,	...	...	...	5 parts
Perchloride of Iron,	...	...	...	10 „
Water,	...	...	...	100 „

dried and exposed as usual under a drawing. The print is developed in a bath of yellow prussiate of potash at 15 or 18 per cent, well washed and fixed with dilute muriatic acid, then finally washed and dried.

The blue prints thus produced can also be used as the basis of drawings for photozincography.

Another process, which, though not quite so simple as the above, has the advantage of giving a print in black on a white ground, forms one of the numerous important photographic methods for which we are indebted to the illustrious Poitevin.

Paper is coated in the dark with a solution of perchloride of iron and tartaric acid in water; when dry, it is exposed under a tracing on cloth or paper, or a reversed positive on glass, and as soon as the parts exposed to the light have become thoroughly bleached the print is removed and developed in a bath of gallic acid. The parts protected from the light turn to an inky black, while the exposed and bleached parts remain white or only take a slight tint. The print is then thoroughly washed and dried. The whole

operations of printing, developing and washing can be finished in half an hour. This process, simple as it appears, requires certain precautions in using a strongly sized paper for the prints, and a very transparent original to obtain the most successful results.

It is capable of the same applications as the cyanotype last described, and, like it, is quite unsuitable for producing maps for publication.

Another process of Poitevin's is dependent on the property possessed by the ferric salts of rendering gelatine insoluble, the solubility being, however, restored when the ferric salt is decomposed by the action of light into the ferrous salt.

Paper is thinly coated with a 6 per cent solution of coloured gelatine and when dry immersed in a solution of—

Perchloride of Iron,	10	parts	or*	1 to 3	parts.
Tartaric acid,	3	"	"	$\frac{1}{2}$ to 1	"
Water,	100	"	"	100	"

and dried in the dark. After exposure to light under a positive, such as a map on tracing paper, the print is immersed in hot water, and the gelatine in the parts exposed to light dissolves out, leaving an exact transcript of the original drawing with dark lines on a white ground. The print may be rinsed in water acidulated with hydrochloric acid to remove the iron salt.

Salmon and Garnier have taken advantage of the fact that if paper is coated with a solution of the percitrate of iron and exposed to the light, the parts exposed to the light become hygroscopic in inverse proportion to the intensity of the action of light, and therefore if such paper is exposed to light under a map or drawing on thin paper or vellum cloth, and afterwards brushed over with a fine powder, such as lamp-black or plumbago, more or less of the powder will adhere to the parts protected from the light, while the exposed parts will scarcely take it at all. After development the print has only to be washed to remove the unaltered iron salt from the film.

Other similar processes of printing with the salts of iron, uranium &c., will be found in the text-books. They are, however, very little used and may be regarded more as curiosities than as practical printing methods.

Platinum printing process.—There is, however, one process which deserves mention as producing very beautiful and permanent prints, in which the image is formed of reduced platinum. This process has been patented by the inventor, Mr. W. Willis, junior. Paper is floated on a weak solution of nitrate of silver and dried. It is then brushed over with a solution of double oxalate of potassium and iron, together with a solution of chloroplatinite of potassium. After exposure under a negative the print is floated on a warm solution of oxalate of potash, which causes the platinum

* Boivin, in *Moniteur de la Photographie*, 1st April, 1878.

salt to be reduced in the parts exposed to the light. The prints are fixed first with hyposulphite of soda, and then with oxalate of potash and finally washed with water.

Collo-chromate printing.—We now come to the more important processes depending on the reaction of the salts of chromium, particularly the alkaline bichromates, on gelatine, gum, albumen and other colloid substances under the influence of light, whereby these substances become more or less insoluble in and unabsorbent of water in proportion to the amount of the action of light, and further acquire the property of taking up greasy ink and not attracting plumbago or other fine dry powder, also in proportion to the amount of the action of light upon them.

This simple reaction, only partially discovered in 1839 by Mungo Ponton, was first worked out and turned to practical account, some twelve years afterwards, by Fox Talbot in his process of photoglyphic engraving; and after him Pretsch and, notably, Poitevin employed it in processes which have been the foundation of nearly all the modern methods of permanent photographic printing.

The simplest of all these processes, and one which may render useful service in the cases already noticed where only a few copies are required, was one of the first published by Poitevin. It consists in coating paper with a mixture of albumen, gum, or gelatine and bichromate of potash, coloured with Indian ink or any other suitable pigment; or, if preferred, the paper may be coated with coloured gelatine and then made sensitive in a separate bath of bichromate of potash, and this is sometimes the best method, because the paper will not keep good for long in its sensitive state. The sensitive coloured paper is exposed under a very clear line negative in a copying frame for a few minutes, and then taken out and plunged into water, either hot or cold, according as gelatine, gum or albumen have been used. The unaltered colloid in the lights of the print, which have been protected from the light under the dark parts of the negative, dissolves in the water, leaving a clear image in pigment on a white ground.

This simple method is capable of extensive use in copying maps or topographical sketches, but is only applicable to subjects in line, well drawn in black and white in accordance with the rules in Sect. III. These prints have the advantage of being quite permanent and, as the collo-chromate mixture is more sensitive to light than the chloride of silver, they can be produced at a quicker rate than the silver prints, and are, of course, cheaper on account of the inexpensiveness of the materials used.

For reproducing subjects in half tones a different procedure must be followed. In the process just described the exposure to light and the development of the print by washing are effected on the coloured side of the paper, and as the light can act with full power through the clear spaces on

the negative, representing the lines of the subject, it renders the colloid coating insoluble throughout the thickness of the coloured film, so that the lines withstand the solvent action of the warm water, which entirely removes the rest of the coloured film from the ground and parts which have not been influenced at all by the light. If, however, instead of a negative of a line subject, on which the lines are transparent and the ground opaque, we take a negative of a subject in half tones, possessing various degrees of translucency in the lights and shadows of the picture, and make a print from it on a piece of the pigmented paper, we shall find that the light will only be able to penetrate through the entire thickness of the colloid film in the deepest shadows, represented, as before, by nearly clear glass; in the darker half-tones it will penetrate nearly through the coating; in the middle tones about half-way through, and in the lightest tones the light will be able to act only on the surface of the gelatine. We shall therefore have a print with an insoluble surface of varying depth, and underlying this a more or less soluble layer; it will thus readily be understood that when exposed to the action of warm water this layer will dissolve and carry away with it the partially insoluble surface-film forming the half shades of the picture, leaving only the stronger shades and giving a rough, hard, and unfinished appearance to the print.

For a long time this difficulty proved a stumbling-block in the way of the progress of permanent printing and gave the silver-printing processes a supremacy of which it has now become difficult to deprive them. The Abbé Laborde was the first to see the necessity for adopting the principle of exposing on one side and developing on the other. Blair, Fargier and Swan applied this to the carbon process, and the latter finally succeeded in introducing a practical method of pigment-printing applicable to the same class of subjects as silver-printing. Swan prepared a tissue by coating paper with a thick layer of gelatine mixed with bichromate of potash and coloured with any suitable pigment. After the exposure to light the gelatinous surface of the tissue was caused to adhere closely to a second piece of paper coated with india-rubber. The whole being immersed in hot water, the paper on which the gelatinous layer was originally supported, became loosened and could be removed, allowing the hot water to gradually dissolve away the unaltered and soluble gelatine. In this manner the exposure to light takes place on one side of the gelatine film, while the washing away of the superfluous gelatine is effected from the other, or unexposed side, without disturbing in any way the exposed parts of the film, and thus the most delicate shades in the half tones are perfectly preserved. Since its introduction by Swan this process has been much improved by Messrs. J. R. Johnson, R. Sawyer and other members of the London Autotype Company which acquired Swan's patents, and under

the name of the 'Autotype' process, it has been worked on a large commercial scale for the reproduction of works of art, and is now fairly beginning to come into active competition with silver-printing for all ordinary purposes of portrait and landscape photography.

On the Continent, the pigment-printing process is largely used by the well-known houses of Braun and Goupil for the reproduction of works of art, and is also coming into extended use for general purposes.

The following is an outline of the operations as now practised by the Autotype Company.*

The pigment tissue is prepared by coating long bands of paper with a moderately thick layer of gelatine coloured with any suitable pigment, and is sold ready for use either in an insensitive or sensitive condition.

The tissue is sensitised by immersion for a minute or two in a 5 per cent solution of bichromate of potash in water, to which some alcohol may be added with advantage, especially in hot climates; the bath should also be cooled down with ice if its temperature exceeds 65°. The tissue is then carefully dried, and when dry is ready to be exposed under the negative. This is done in a printing-frame in the usual way, the only precaution necessary being to paste slips of thin grey paper round the edges of the negative, so as to cut off a great portion of the light and form what is called the 'safe edge'. As the tissue generally appears black all over, the progress of the printing cannot be ascertained by inspection, and it is necessary to use a little instrument called an 'actinometer', by means of which, the degree of exposure necessary for any negative having been once ascertained, it is easy to give the same amount of exposure to successive prints. Up to this point the operations are the same whatever may be the nature of the support upon which the picture finally rests. The subsequent operations, however, differ accordingly as the image is developed on a final support, by what is called the 'single transfer' method, or on a temporary support, by the 'double transfer' method. In any case, some support is indispensable to retain the image and preserve it from injury during the washing.

In the single transfer process the support is paper coated with a gelatinous substance which, though insoluble in water, retains sufficient adhesive power when moistened to enable it to hold the picture during development and afterwards permanently.

After exposure under the negative the pigmented tissue having been immersed in cold water, together with a piece of the transfer paper, the two surfaces are applied to one another under water, and both drawn out together. They are then laid on a zinc plate, tissue uppermost, and brought into close

* See "*The Autotype Process*", 6th edition. Also Monckhoven's, Vidal's and Liesegang's treatises on Carbon-printing.

contact, all intervening air being driven out by means of an india-rubber scraper, or 'squeegee', which also removes all superfluous moisture. The prints and support are allowed to remain together for a short time, and are then immersed in warm water. After a little while the soluble gelatine will soften and become partially dissolved, when the paper forming the original support of the layer of gelatine may be gently removed, leaving a dark slimy-looking mass on the transfer paper. The soluble gelatine gradually clears away by the action of the hot water and reveals the image in more or less perfection of details according as the exposure has been properly timed. When fully developed, the print is washed with cold water, then passed through a solution of alum, rinsed again with water and allowed to dry.

Instead of paper, any other suitable permanent support may be used, but whatever the support may be, a reversed negative must be used if it is desired to obtain non-inverted pictures by the single transfer method.

When it is inconvenient to use a reversed negative, and it is desired to obtain a non-inverted picture—the development of the tissue-prints must be conducted by the double transfer method upon a temporary support, either rigid or flexible. The discovery that the pigment pictures might be developed upon any impermeable surface is due to Mr. J. R. Johnson, who also found that if such surface previously receive a coating of some fatty or resinous compound, the picture may be transferred, after development, to a final support.

The most suitable surface for the temporary support is a sheet of zinc, which may be either polished or grained; opal glass, or porcelain plates may also be used with advantage.

The plate employed as the temporary support first receives a coating of a solution of wax and resin in turpentine, and some operators coat the plate with collodion after the waxing, in order to improve the surface. The pigment tissue carrying the image is attached to the support under water in much the same way as in the single transfer method, and after remaining for a time, is developed in the same way and allowed to dry. The plate with the picture on it is then rinsed in water, and a piece of what is called double transfer paper—a fine paper coated with an enamel surface—having been soaked in water till quite soft, is laid on the wet plate, avoiding air-bubbles, and pressed into perfect contact with it by means of the india-rubber scraper. The picture with the transfer paper attached is now dried carefully, and when dry separates of itself from the temporary support.

Mr. J. R. Sawyer of the Autotype Company has introduced a flexible support, consisting of paper coated with a solution of gelatine rendered insoluble with chrome alum. When dry this is coated again with an alkaline solution of shellac, dried and well rolled under powerful pressure—it is afterwards coated with a waxing compound. The use of this flexible sup-

port is said to be advantageous with small pictures, but I have not found it answer very well in this country.

All these operations, which seem so complicated, are in reality very simple, and as the sensitised tissue is very sensitive to light a great many prints can be produced in a single day. The number may, moreover, be increased by a plan proposed by Capt. Abney, R. E., of exposing the print for only half the usual time and then letting it lie by in the dark for some hours. The decomposing action set up by the light goes on in the darkness, and on development a picture is produced quite as good as if it had received a full amount of exposure and been developed at once. This discovery is largely utilised by those working the process in England, and enables an amount of work to be done in the winter months which would otherwise be impossible.

The single transfer process has been successfully worked at the Surveyor General's Office in Calcutta for the production of photographs of the convicts transported for life to the Andamans. No great difficulties were met with in working it, even in the hot weather, but it was found necessary to ice the solution of bichromate of potash used for sensitising the tissue, and to add a certain proportion of spirits of wine to it, in order to keep the gelatine from softening too much. Messrs. Bourne and Shepherd, the well-known Indian photographers, have made arrangements for working the Autotype process at Simla, the climate of Bombay having been found unsuitable.

The pigment prints are perfectly permanent for all practical purposes, and, though they may under certain circumstances change colour slightly or lose their brilliancy, there is no such absolute fading and loss of details as in silver prints. The process may be applied in all cases to replace silver printing where permanency of results is an object. As I have mentioned before, the process is not quite suitable for the reproduction of coloured or shaded maps, owing to difficulties in obtaining prints comprising large surfaces of clean white paper together with the delicate half tones of hill-shading. For maps in line the simple carbon process is more suitable, or if many copies are required, photozincography would be better.

Anilin Printing.—Before proceeding to the consideration of the processes employed for producing prints in the printing press, mention may be made of an ingenious process of printing which depends upon the use of salts of chromium, and is largely used in Europe for the reproduction of maps and plans. It is known as the 'Anilin printing process' and is the invention of Mr. J. Willis, who has patented it.

Paper is impregnated with a solution of bichromate of potash to which a little phosphoric acid has been added. After exposure to light under a transparent positive, such as a drawing on thin paper or vellum cloth, or even

an ordinary engraving or manuscript, it is exposed in a closed box to the vapour of anilin, which develops a greyish image. The print is then fixed by merely washing with water. As a positive original yields a positive print, maps or drawings may be copied without the necessity of making a negative by means of a camera, which is a great recommendation in certain cases. The process has hitherto been worked only by the inventor and his licensees and has not come into general use.

V. PHOTOLITHOGRAPHY AND PHOTOZINCOGRAPHY.

In all the processes noticed in the last section, it is necessary to repeat the printing operation by exposure to light for every print produced. The rate of printing will consequently be more or less dependent on the sensitiveness of the paper, the strength of the light at the time of exposure and the state of the weather; the printing operations can, moreover, only be carried on during the few hours of daylight. In the photo-mechanical processes, now about to be described, these grave disadvantages are obviated, and, once the photographic image has been produced upon the printing surface, prints may be made in any numbers, quite independently of light or weather.

The simplest and most generally useful of these mechanical processes is photolithography, or the analogous photozincography, the principal difference between the latter and the former being merely the substitution of a thin smooth plate of grained zinc for the thick heavy lithographic stone. For maps of large size, zinc is certainly the most suitable and offers in other respects all the advantages of stone, but the latter being better known is generally preferred for ordinary work of moderate size.

In ordinary lithography, the image may be produced on the stone or zinc either by *transfer* from a drawing on paper with the solution of resinous soap known as 'autographic ink', or by *drawing direct* on the stone with a similar ink or crayon; so in photolithography there are two similar methods of obtaining the photographic image—either by transfer from a photographic print in fatty ink—or by impressing the image direct on the stone, by applying a photographic negative on a suitable coating sensitive to light and removing by means of a solvent the parts unaltered by light. The transfer method being the most convenient is the one in general use.

The first photolithographic process on record is that proposed by Jobard, of Brussels, who, in 1839, obtained lithographic proofs from stone or zinc plates that had been treated with iodine or bromine. This process never came into practical use and has been quite superseded by two distinct methods—one dependent on the alterability of asphaltum under the influence of light—the other on the reactions of the alkaline bichromates upon gelatine and other colloid substances.

Asphaltum methods.—In 1852, MM. Lemer cier, Lerebours, Barreswil and Davanne, proposed a method of litho-photography, in which a stone was coated with a solution of bitumen in ether, exposed to light under a reversed negative, and developed with ether, which dissolves the parts not affected by the light, while the exposed parts being insoluble remain and form the image. (Benzole, chloroform or turpentine may also be used instead of ether). After development the stone was prepared with acid and gum and inked in the same way as an ordinary lithographic drawing.*

Since then many other similar asphaltum processes have been proposed and have been worked with great success, both for subjects in line and half-tone; but, owing to the length of exposure required and the uncertainty of the results, this process is not well adapted for general use, and has, I believe, been almost abandoned in favour of the collochromate methods.

Collo-chromate Processes.—Paul Pretsch, whilst working out his photogalvanographic process, hereafter to be described, discovered that if a mixture of gelatine and bichromate of potash be spread upon a suitable support and when dry exposed to light, then again moistened and inked in with a roller charged with printing ink, the ink would only take upon the parts altered by the light, and thus impressions could be obtained by transferring the design to zinc or stone.

Pretsch does not seem to have made any practical use of this discovery, but shortly afterwards, in 1855, Poitevin independently worked out a photolithographic process on the same principle, which has been the foundation of all the present processes of photolithography and photocollotype and is worked to the present day for the reproduction of the Belgian topographical maps. Poitevin impressed his photographic image direct upon the stone and not by transfer.

The first practical *transfer* process of photolithography seems to have been suggested by Asser, of Amsterdam, early in 1859. He coated unsized paper with starch, and then floated it on a strong solution of bichromate of potash. When dry it was exposed to light under a well intensified negative. The print was next heated with a flat iron, then moistened and inked in with transfer ink, by means of a roller, and thus an impression was obtained which could be transferred to stone or zinc.†

The next transfer processes were the Southampton process of photozincography, which was founded on Asser's, and Mr. Osborne's process of photolithography. These two processes, though quite independent one of the other, were identical in principle and almost so in details; the only difference being that Mr. Osborne added a certain proportion of albumen to the mixture of gelatine and bichromate and then treated his prints with boiling water, in

* See Davanne, *Chimie Photographique*, p. 456.

† *Photographic News*, Vol. III, p. 146.

order to conglutinate the albumen and leave a slight coating of it on the paper, so as to obtain a 'grip' on the stone during the process of transfer.*

At the Ordnance Survey Office, Southampton, and at the various photographic offices in India, in which the process has been introduced from Southampton, photozincography is used, with the best results; but in Australia, America and the Continent of Europe photolithography is more usual and it is also used at Madras.

These processes have occasionally been used with fair success for the reproduction of shaded maps, architectural views and other subjects in half-tones, but they are not by any means suitable for such subjects, and are best adapted for the reproduction of maps and drawings boldly executed in dot or line alone.

They may also be used for copying prints or engravings of all kinds on the same, larger or smaller scales, but engravings, and even many lithographs, are generally more or less unsuitable for the purpose. The best results are obtained from original drawings specially prepared to suit the requirements of photographic reproduction, in strict accordance with the rules already given.

The following outline of the Southampton method will give an idea of the operations. Like the pigment-printing process, already described, it depends upon the property possessed by a dried layer of gelatine and other colloids, when mixed with an alkaline bichromate, of becoming insoluble and repellent of water under the influence of light. The procedure, too, is much the same as in the simple pigment-printing process, except that, instead of the fatty ink which forms the image on the photo-transfer print being mixed with the gelatine, it is applied to the surface of the print after exposure to light. The inked print is then washed in hot water, by which the colloid coating in the unexposed parts is dissolved and carries away with it the superfluous ink not retained by the lines forming the image.

The negatives are obtained by the methods already described applicable to the reproduction of subjects in line.

Having obtained a suitable negative, the next operation is to produce from it a photograph in greasy ink which may be transferred to zinc or stone.

To prepare the sensitive paper, a sheet of bank-post paper is coated twice with a mixture of 6 parts gelatine and 4 parts bichromate of potash, dissolved in 100 parts of water, dried in the dark and glazed to give it a smooth surface. It is then exposed to the light under a negative for one or two minutes in the sun, or until the finest lines are distinctly visible. When sufficiently exposed, which may be ascertained by the whole of the detail appearing in brown upon a bright yellow ground, the print is taken out of

* *Photographic News*, Vol. IV, p. 374.

the printing frame and passed through a lithographic press in contact with a polished stone, or zinc plate, which has been coated with a lithographic transfer ink, and thus receives an even coat of the greasy ink. The inked print is immersed for a few minutes in tepid water, to soften the gelatine still remaining soluble in the parts not acted on by light, and then laid on a sloping glass or metal plate and gently washed with a sponge and warm water till all the unaltered gelatine is removed, carrying the superfluous ink with it. The lines, on which the light has acted, remain insoluble and retain the ink, forming a clear image of the subject in a greasy transfer ink, precisely similar to the ordinary lithographic transfer drawing. When all the details are clearly and sharply defined, and the ground is quite free from ink, the print is rinsed in clean water and dried. It is then ready for transfer to stone or zinc.

It often happens that a map is too large to be photographed in a single section. In this case the transfer prints of the different negatives are carefully joined together with gelatine and transferred to the stone or plate; or if too large to be printed in one sheet, the joined-up transfers may be cut up into as many convenient-sized sections as may be necessary.

Zinc plates possess great advantages over lithographic stones on account of their superior lightness, cheapness, facility for storage and less liability to breakage, and are therefore to be preferred in reproducing plans of large size. For fine work stone is considered by some to give better results than zinc, but I believe that if due care be taken as good prints may be made from zinc as the best from stone.

The plates used for this purpose are about $\frac{1}{8}$ of an inch in thickness, and have one side carefully planed and smoothed; but in order to give a somewhat porous surface to the plate, so that it may be more absorbent of moisture and hold the greasy ink better, the planed side of the plate is grained, or roughened by grinding it evenly all over with very fine sand and water. After the transfers are made, the plate is etched with a preparation of gum and decoction of gall-nuts to which a little phosphoric acid is added.

If the transfers are made to a lithographic stone instead of to a zinc plate, the operations are exactly the same as for transferring an ordinary lithographic transfer-drawing, except that the stone need not be heated. The operations of printing, whether from zinc or from stone, are precisely the same as in ordinary lithography.

Various modifications have been introduced, but the above process is still one of the best and most simple, and, if care be taken with suitable subjects, results may be obtained by it not to be surpassed by any other method. Full details regarding it will be found in Sir H. James' '*Photozincography*,' also in the *Photographic News*, Vol. XII, page

280 *et seq.* The accompanying specimen of a reduction from an old engraved map will give an idea of the results that may be obtained.

In the Southampton process the whole of the unaltered gelatine is removed from the paper, and the objection has been made that, in consequence of this, the ink on the lines being left on ridges of gelatine is more liable to spread in transferring, that the fine lines are liable to be washed away by the dissolution of the gelatine beneath them, and that the prints are liable to slip during transfer. To remedy these defects various methods have been proposed for retaining the gelatine on the paper.

One of the best of these methods has been perfected by Capt. Abney, who has patented it under the name of 'papyrotype.'*

A tough paper is coated with gelatine, and subsequently treated with alum or chrome alum. It then receives a coating of gelatine and bichromate of potash as in the Southampton process. After exposure to light the print is drawn through *cold* water, and is then 'squeegeed' down on to a smooth metal plate, and inked in with a soft gelatine roller charged with transfer ink. The ink 'takes' only on the parts exposed to light, while the ground of the print remains clear. When the image is fully inked up, the print is dried and exposed to light, to harden the gelatine thoroughly by the action of light on the bichromate salt still remaining, and is then ready for transfer to stone or zinc.

Among the advantages claimed for this process, the principal are that—

The ink which forms the lines is not left on ridges of gelatine, as in the Southampton method. The fine lines are not liable to be removed. The surface of the transfer will have no tendency to slip during transfer.

In practice this method was not found to answer in this country so well as the ordinary one, but a modification of the latter has lately been introduced in the Surveyor General's Office, with the same object as the papyrotype, and seems to answer well.

The paper is prepared as usual with two coats of gelatine and bichromate of potash. It is then put away for a few days, in order to allow the gelatine to become hard and insoluble. When required for use, it is coated again with a mixture of gelatine and bichromate of potash of about one-third the usual strength, and is then exposed to light and inked in the usual way. The washing is done with cold water instead of with hot.

Instead of allowing the gelatine to harden by keeping, which takes from 8 to 12 or 14 days according to the season, the hardening action may be hastened by laying the sensitive paper face downwards on a board, and allowing the light to act on the back surface for a minute or two. This may be done, either after the print has been obtained from the negative, or just

* '*Instruction in Photography*,' p. 155.

after the preliminary coating has been given to the paper. The gelatine may also be hardened with alum or chrome alum.

It has been found that this method has the advantage that a base of hard insoluble gelatine remains on the paper and retains the finest lines, while the fresh and easily soluble final coating preserves the clearness of the ground. It is necessary that the underlying gelatine should be thoroughly hardened, otherwise the transfers stick to the zinc plate in transferring, and are difficult to remove; the soft gelatine is also liable to spread over the lines and prevent their transfer.

Another advantage is that warm water is not required for washing the prints, and the ink is not so liable to become pasty as in the usual mode of working. The lines are found to keep crisp and the spaces between them free from scum, thus giving clearer and sharper transfers.

Mr. Herbert Deveril, Government photolithographer in New Zealand, found that, in working Osborne's original process of photolithography, which is still generally used in the Australian Colonies, great inconveniences arose from the use of boiling water to coagulate the albumen added by Mr. Osborne to the gelatine in order to produce an insoluble surface with a 'grip' on the stone. He has therefore substituted the following method of producing his transfer prints. Paper is first coated with gelatine to which a small proportion of chrome alum has been added. This is allowed to dry and is then sensitised in a solution of bichromate of potash. The prints are exposed and inked as in the Southampton process, and are washed off in cold water.* Mr. Deveril claims for this method the further advantage that the sensitive paper can be kept in good condition for a long time. The keeping properties of papers coated with gelatine and bichromate are, however, very dependent on climatic conditions. The results which I have seen by the process are exceedingly good.

A method of photolithography by transfer which yields excellent results in line, and even reproduces half-tones fairly well, is a modification of Asser's process, invented by Mr. Toovey, of Brussels, who coats paper with a solution of gum arabic mixed with bichromate of potash, and after exposure to light under the negative in the usual way, places the transfer-print face downwards on the stone with several thicknesses of wet blotting paper over it, and leaves it under pressure for some hours in a powerful press.

The gum on the parts not exposed to light being soluble is forced into the stone and prepares it, while the lines being hardened and rendered insoluble leave the stone quite free from gum and ready to take printing ink from a roller when passed over them, thus producing an image which may be printed from as soon as the soluble bichromate salt has been washed out, because the bichromated gum is a most powerful preparation for the stone

* '*Photographic News*,' Vol. XIX, p. 585.

and, indeed, is difficult to remove without grinding the stone down to some depth.

This process requires care in adjusting the amount of moisture to be applied to soften the gum, so that it may not be squeezed under the lines and block them up, and it has not, I believe, come into general use.

There are two disadvantages which militate against the employment of the transfer processes of photolithography for the finer and better class of maps. The first, is the difficulty of obtaining reproductions perfectly true to scale, owing to the unequal expansion of the transfer paper in the various washings and squeezings it has to undergo. Although this unequal expansion and contraction is very slight, and for most practical purposes may be disregarded, it has greatly hindered the more universal adoption of this valuable method for the reproduction of the official maps in England and foreign countries.

Mr. Rodriguez, of Lisbon, has, however, lately introduced an improvement into the transfer process with the object of doing away with the possibility of stretching in the course of any of the operations.* Instead of using paper as the support of the coating of gelatine on which the photographic image is impressed, he uses a sheet of tinfoil about the thickness of thin paper. This is first smoothed on a very finely grained lithographic stone and then laid down quite flat on a sheet of zinc. After being cleaned with alkali and well washed, the tinfoil is brushed over with a solution of gelatine and bichromate, dried rapidly, and is then ready to be exposed under a negative in the usual manner. To ink the print, the sheet of tin is first plunged into water, and then carefully laid down wet on a lithographic stone so as to avoid folds, the gelatine side being uppermost. The film is then inked in with a roller. After the first inking in the print is left for about a couple of hours and is then inked in again and afterwards washed with a sponge and water. It may then be lifted off the stone and dried. The operations of transfer are the same as usual.

The second disadvantage of the transfer methods is the almost unavoidable spreading of the lines under the operation of transferring, which makes a photolithographed map look heavy and unsightly compared with a lithographed one. This defect may, however, be diminished very much by skilful manipulation and taking care to have as thin a coating as possible of gelatine on the paper, and to use a good hard transfer ink in small quantity. With these precautions and with a suitable original, results may be obtained from photolithographic transfers which will well compare with ordinary lithography, or even engraving, in sharpness and delicacy.

These special defects of the transfer methods may be in great part obviated by impressing the photographic image direct on the stone, as origi-

* '*British Journal of Photography*,' Vol. XXV, p. 232.

nally proposed by Poitevin, but this plan has again other disadvantages of its own which render it less suitable for map work than the transfer process. It has, however, been used extensively, and very successfully, in the production of the Belgian topographical maps on the scale of 1 : 20,000.

In the process used for the Belgian maps, the stone is covered with a very thin coating of a mixture of gelatine and bichromate of potash, rapidly dried and exposed to light under a reversed negative, which is obtained by reversing the position of a dry tannin plate in the camera and allowing the light to act through the glass on the underside of the collodion film. A thin coating of printing ink is then applied all over the stone with a roller, and the surface is afterwards washed with warm water in which a little starch has been dissolved. This gradually removes all the soluble parts of the gelatine coating, leaving on the stone a clear image of the map. The stone is then covered with gum and after drying and remaining for a short time is ready for printing and capable of yielding 1500 good impressions.*

For line-work zinc plates are also used and prepared in much the same way.

This process has undoubtedly some advantages as regards accuracy of scale, and the quickness and cheapness of the operations, but on the other hand it has disadvantages as regards the difficulty of securing perfect contact between the stone and the negatives, the necessity for a reversed negative, the prints being limited within a single negative and the inconveniences of working with heavy stones.

Besides the foregoing, many methods of photolithography have been proposed, but as for the most part they are only modifications of the processes I have described, which are all good and may be considered typical, it will be unnecessary for me to go further into details regarding them.

VI. PHOTOCOLLOTYPE.

The great defect of all the processes of photolithography described in the last section is, that they can only be applied with advantage to the reproduction of drawings or subjects in which the gradation of shade is shown by lines or dots separated by white spaces of varying sizes and at different intervals apart, as in line or stipple engravings and lithographs in line or chalk. Even such drawings to be successfully reproduced must be in a good bold open style and have all the lines or points composing them of an equal and perfect blackness. In the many attempts that have been made to reproduce photographs from nature by photolithography or photo-engraving, or to copy paintings and brush-shaded drawings in which gradation of shade is continuous, success, only partial at best, has been secured by

* Maës and Hannot's '*Traité de Topographie, et de Reproduction des Cartes au moyen de la Photographie*'; also Hannot's '*La Photographie dans les Armées*.'

breaking up and destroying the continuity of gradation. By the processes of photocolotype, so called from the printing surface being of gelatine, these defects are entirely obviated, and absolutely permanent photographic prints may be produced in the printing press equal to silver prints in perfect delineation of detail and delicate gradation of shade, but vastly superior to them in permanence and cheapness of production.

Poitevin was the first to recognise, so early as 1855, the fact that the half-tones were better preserved on stones that had been treated with a chromated colloid mixture if, after exposure to light under a negative, instead of being inked all over and then washed with water to remove the superfluous ink, they were first moistened and then inked in with a lithographic roller charged with printing ink*. He seems, however, to have always regarded the stone as the principal printing surface and treated it by the ordinary methods of lithography. Only a few impressions could be obtained from stones thus treated.

In 1866, Messrs. Tessié du Mothay and Marechal, of Metz, discovered that the stone or metal plate hitherto used as a printing surface might be replaced by a mixture of isinglass, gelatine and gum, treated with an acid chromate, and evenly spread upon a well polished metal surface; because if, after exposure to light under a photographic negative, such a gelatinous surface were moistened, greasy ink applied upon it with a roller would adhere well to the parts of it that had been acted upon by light, and would be taken up by those parts in proportionate quantities, according to the intensity of the gradations of light and shade produced on them by the action of light, and their consequent impermeability to water. Photographic prints in fatty ink reproducing the most delicate gradations of shade without any apparent grain or break of continuity could thus be produced.†

It will be seen that this process was based on exactly the same principle as Poitevin's photolithography, but differed from it in the distinct recognition of the colloid film as the printing surface. Messrs. Tessié de Mothay and Marechal were also the first to recognise the necessity of adding a certain proportion of acid or of oxydising or reducing agents to the chromaté salt used for sensitising the gelatine, with the object of rendering the colloid surface more apt to receive the greasy ink and also of hardening the film so as to enable it to withstand the wear and tear of printing. This they did by exposing the sensitive plates to a high temperature before using, but the effect was produced in great measure by the decomposition of the chromate salts by the acids or other substances added to the colloid mixture.

Messrs. Tessié du Mothay and Marechal printed off their 'phototype' plates in a lithographic press in much the same way as ordinary lithographs,

* '*Traité de l'impression photographique sans sels d'argent*,' p. 78.

† '*Photographic News*,' Vol. XI, p. 260.

but with certain modifications due to the peculiar nature of the printing surface. The principal of these was the use of two inks, one stiff, for giving force to the shadows, the other thin, for bringing out the more delicate half tones.

The 'phototype' process as at first proposed laboured under the defect of not being able to yield a large number of prints from a single plate, but, in 1869, it was improved upon in this respect by Albert, of Munich, who substituted a thick glass plate for the metal plate used by Tessié du Mothay and Marechal as a support for the colloid film. His films consisted of albumen, gelatine and bichromate of potash alone, and he gave them the required solidity and adherence to the glass by first coating the plate with a sensitive colloid mixture containing a large proportion of albumen, and then giving the under side of this first coating a preliminary exposure to light through the glass. The second coating containing more gelatine was then applied, and after it had dried, and the photographic image had been impressed upon it, the plate was again exposed from the back, in order to thoroughly solidify and combine the under part of the compound film. The gelatine films so prepared were capable of yielding some hundreds, or even, it is said, thousands of perfect copies. This process is still largely used by its inventor and is known by the name of Albert-type.*

According to some authorities, Messrs. Ohm, Grossmann and Gemoser, of Berlin, took out a patent, in 1867, for a method of photocollographie printing comprising, in addition to the use of glass as the support of the gelatine film, of the double coating of the plate and of the hardening of the film by exposure of the back surface, the introduction into the sensitive gelatine mixture of certain resinous compounds dissolved in spirit, by which the gelatine film is rendered quite insoluble and admirably adapted to form a fine printing surface. It is said on the other hand that the credit of all these improvements is due to Albert; but, in any case, it is certain that until after the publication of Albert's process early in 1869, Ohm and Grossmann's was almost unknown and had not come into general use. In October 1869, the Autotype Company in London acquired the patent, and have since worked the process with the greatest success.

About a year after the publication of Albert's method, Mr. Ernest Edwards, of London, introduced, under the name of 'Heliotype,' a very important modification of the photocollotype process.

He first waxed a glass plate and then coated it with a substantial layer of gelatine and bichromate of potash, containing a small quantity of chrome alum, with the object of hardening the gelatine and rendering it insoluble, without destroying its impermeability to water. When dry, the gelatine

* '*Photographic News*,' Vol. XIII, p. 121.

film was removed from the waxed glass plate, and the side which had been next to the glass was exposed under a reversed negative in the usual way, and, then, as in Albert's process, the back surface of the film was hardened by exposure to light. After this, the film was attached under water to a metal plate, preferably pewter, coated with india-rubber, and 'squeegeed' into perfect contact with it. The bichromate salt was then removed by washing and the plate was ready to be printed in an ordinary Albion printing press.

In this process the peculiarities were the use of chrome alum for hardening the gelatine; the separation of the colloid film from its original support, by which perfect contact with the negative was secured, as well as less risk of breakage of the latter; the subsequent transference of the film to a metal plate, by which the liability to breakage of glass plates in the progress of printing was obviated, and, lastly, the substitution of vertical instead of a scraping pressure in printing, by which the gelatine films were not exposed to injury by wear and scraping of the surface.

This process is still, I believe, largely practised and full details of it, with various improvements suggested by Capt Abney, R. E., will be found in the latter's excellent little work—"*Instruction in Photography*."

About the same time, Herr Obernetter, of Munich, proposed another process of the same kind offering some peculiarities, and said to produce very satisfactory results.

A sheet of glass is coated with a mixture of gelatine, albumen, sugar and bichromate of potash, dried and exposed to light under a negative. The plate is then dusted over with finely powdered zinc, which attaches itself only to the parts protected from the light and in proportion to the amount of protection they have received. The plate is then heated to about 369° F., or exposed to light till the whole surface of the film has been rendered insoluble. Before printing, the plates are treated with dilute muriatic or sulphuric acid. By this operation the parts of the gelatine film covered with zinc, are rendered, by the formation of hydrogen, susceptible of attracting water to a greater or less degree, while the other portions, upon which no zinc has settled, are capable of receiving a fatty ink. The printing is then proceeded with in the usual manner.*

Since 1869, when these processes first began to come into practical use, many methods of working have been introduced, chiefly in Germany and France, but so far as known they are nearly all of them more or less modifications of one or other of the above, merely differing in the manner of preparing and hardening the gelatine film. A good deal of information on the subject will be found in Husnik's "*Gesamtgebiet des Lichtdrucks*," Geymet's "*Phototypie*," Moock's "*Traité pratique d'impressions photo-*

* '*Photographic News*,' Vol. XIII, p. 483.

graphiques aux encres grasses," and A. Martin's "*Handbuch der Emailphotographie und der Phototypie oder des Lichtdruckes.*"

The great difference between the photocollotype processes and lithography is, that whereas the lithographic stone receives a like quantity of ink in all parts of the image, and is incapable of producing a true and continuous gradation of shade, the moist gelatine film possesses the valuable property, not possessed by the stone, of receiving a greater or less amount of ink in different parts of the image, in exact proportion to the intensity of the action of the light upon them, and is thus capable of reproducing the most delicate gradations of shade as perfectly as they are shown in an ordinary silver print.

It will thus be readily understood that instead of the advantages of photographic reproduction by cheap and speedy mechanical processes being confined to the reproduction of certain special subjects, they can be extended to all classes of subjects, such as photographs from nature, brush-shaded and coloured maps, MS. records, drawings and paintings of all kinds. Even for line subjects, the process surpasses most of the known processes of photo-engraving, photozincography or photolithography in the delicacy, sharpness and clearness with which the finest lines can be reproduced, as well as in perfect accuracy of scale, owing to there being no intermediate process of transfer, with its attendant washings and pressings, and the plate being printed by vertical pressure.

The process has the further advantage that the prints do not require mounting, and this makes it very suitable for book illustration, for which, indeed, it is now being very largely used. It is especially valuable for illustrations of a scientific character in cases where otherwise only the highest class of lithography or engraving would be applicable and at an enormously increased expense.

For the most successful application of the photocollotype processes to the reproduction of maps, the result depends, as in photozincography, very much on the quality of the negative, and that again on the original.

Any negative that will give a good photographic print will answer, but the successful reproduction of shaded maps or drawings demands considerable care in the execution of the original drawing as well as in taking the negative. The precautions to be taken in these respects have already been indicated in sections II and III.

For some years past my attention has been given to the utilisation of this valuable process for the reproduction of maps and other photographic work which the Surveyor General's Office is called upon to do for various Government departments. In the Proceedings of the Society for November 1871, I described a process which I had found to answer well for line work, and strenuous efforts were made to bring this and other methods into prac-

tical working. It is much to be regretted that owing to the many difficulties met with in manipulating the gelatine films in the hot damp climate of Calcutta, and in getting printers with the special artistic skill required to produce the best results, our efforts have not been quite successful, and, as photozincography is found more convenient for most of the work passing through the office, the photocolotype process has not been brought into general use.

As the process previously described in the Proceedings has since then been modified and is, I know, exceedingly good for line work, the following description of the manipulations, extracted from the Annual Reports of the Surveyor General's Office for 1871-72 and 1872-73, may prove of interest, especially as the working details of few of the other processes have been published.

The printing plates are of plate glass, about $\frac{3}{4}$ or half an inch in thickness, evenly ground on one side with fine sand. When required for use they are thoroughly cleaned to remove all grease, and then carefully levelled.

The composition of the gelatine coating is as follows :—

A.	{	Gelatine,.....	1 ounce.
		Glycerine,	1 dram.
		Distilled water,	6 ounces.
B.	{	Albumen,*	1 ounce.
		Distilled water,	1 ounce.
C.	{	Tannin,	10 grains.
		Water, (in hot weather, Spirits of wine,)...	1 ounce.

The above quantity will be sufficient for two square feet of plate.

As soon as the gelatine in solution A is quite dissolved, B is added and then C is poured in gradually with constant stirring. The whole is strained through two thicknesses of cotton cloth and poured evenly over the plates on the ground side, any air bubbles being carefully removed. The plates are then covered over with a light paper cover, to prevent dust falling on them, until they are *set*, when they may be removed into the open air and turned face downwards to dry. Or they may be dried with gentle heat in a drying box, but too quick drying is to be avoided because the gelatine films will dry unevenly.

When the plates are dry, they may be put away till required or sensitised in a bath of—

Bichromate of Potash,.....	1 part.
Water,	20 parts.

They are allowed to remain in this for 5 minutes, then removed to a drying box and dried with a gentle heat. When dry, the deposit at the back of the plates, and any inequalities at the corners of the gelatine film are

* 30 grains of carbolic soap may be used instead of the albumen.

removed, and the plates are ready for exposure under the negative, which must be a reversed one obtained as described in section III.

If the reversed negative has been taken direct on glass, the exposure to light is performed in a pressure frame, in the same way as for ordinary photographs. It is advisable, however, to secure clean margins by shielding the borders of the negative by means of a mask, cut out in yellow or brown paper, which should well overlap the edges of the printing plates. The sensitive plate may be rubbed over with a little powdered soapstone to prevent any adherence to the negative. Some sheets of dark-coloured paper or cloth should be placed behind the sensitive plate and then a thick sheet of glass to give a good even pressure.

If, however, the negative has been stripped from the glass and is in the form of a thin skin, the most perfect contact will be produced by transferring the negative on to the surface of the printing film, in such a manner that it may be removed again after the exposure.

This operation presents some difficulties, but I have found the following method answer well. The sensitised and dried gelatine surface of the printing plate is covered with a very thin even coating of wax dissolved in turpentine or benzole. The plate is then placed in a dish containing sufficient spirits of wine to cover it. The thin negative film is laid down upon the gelatine in its proper position, the plate and film are then removed from the spirit, and the negative film carefully squeezed into close contact with the gelatine surface. The plate is then covered with a few thicknesses of blotting paper, under a thick glass plate, and allowed to dry. When dry, the plate is ready for exposure. After exposure, the negative film is removed from the gelatine surface; and, if sufficient wax was used and the film is fairly tough, it comes away without tearing. Should it tear, it should at once be dissolved off with ether, or there will be a continuing action of light on the parts of the gelatine surface protected by the negative film, so that they will print darker than the rest of the plate. Before printing, the wax should be removed from the gelatine with turpentine. The object of effecting the transfer in a bath of spirits of wine is, that neither the gelatine, wax, bichromate of potash or negative film are in any way affected by it.

The duration of the exposure to light varies from 10 minutes in the sun for a clear line subject, to from 25 to 50 minutes for a subject in half tones, according to the density of the negative and the intensity of the light. It is almost impossible to judge of the progress of the printing by inspection, and it is necessary to use an *actinometer* as a guide to the exposure. The following form of actinometer has been found to answer well for the purpose. It consists principally of a box, in the lid of which is fixed a translucent scale divided in 14 squares of different densities, No. 1 being

almost transparent, while No. 14 is almost quite opaque; and numbers corresponding to the densities are painted in opaque colour on the scale. The scale is made by taking a collodion negative of a drawing shaded in tints of different strengths, and should be intensified so as to correspond in density with the kind of negatives it is intended to be used with.

The body of the box contains a block for carrying the sensitive surface, which may be spread on paper or on a glass plate, and a strip of vulcanised rubber below it presses the block into close contact with the scale.

I prefer to use in the actinometer a sensitive film of the same composition as the printing plate; small slips of glass are therefore coated with the gelatine mixture, sensitised, dried and exposed to light at the same time and in the same manner as the printing plates, and thus the progress of the action of light can be watched and timed very closely.

When the exposure to light is considered sufficient, the printing plate is removed from the pressure-frame and laid, gelatine side downwards, on a board covered with black cloth. The back, or under surface, of the gelatine is then exposed to light, for about 10 minutes, to thoroughly harden the gelatine and prevent it from swelling too much in the after processes. It is well to conduct this second exposure under a piece of ground glass, in order to prevent any scratches that may be on the back of the glass from showing as white lines in the print. The edges of the plate are then protected by strips of paper coated with solution of india-rubber, and when the india-rubber is dry, the plate is soaked in water until all the soluble bichromate has been removed, and is then ready for printing.

The plates can be printed in a lithographic press, but then they require to be fixed on a level stone with plaster of Paris. It has been found, however, more convenient, and in some respects better, to print them with vertical pressure in an ordinary Albion platen press; and in order to prevent the glass being broken, the bed of the press is fitted with two or three thicknesses of kamptulicon, besides a sheet of vulcanised india-rubber on which the plate rests. It is also desirable to place a piece of white paper over the bedding in order to enable the state of the plate when it is being inked up, to be better seen.

The inking in requires great skill and care on the part of the printer and is the most difficult part of the whole operation. The plate having been well soaked in water is laid on the press, and after being wiped to remove the excess of moisture, is inked in, if a line subject, with an ordinary lithographic roller charged with an ink composed of lithographic chalk ink thinned with a little olive oil, followed by rolling with a smooth roller to clear away the superfluous ink; a mask of the required size is laid on the plate to preserve the margins clean; over this comes the printing paper covered with a piece of soft felt, to drive the paper well into the hollows of

the plate; the tympan is lowered and the impression pulled in the ordinary way. The plate is then dampened and inked in again, and so on.

Half-tone subjects are treated in the same manner, but it is sometimes advisable to use two kinds of ink of different consistence or depth of colour; a stiff or dark ink gives force to the shadows, while a thin or lighter coloured one will bring out the delicate half-tones. Rollers made of gelatine, glycerine and castor-oil may be used with advantage, as they drive the ink better into the hollows of the lines than the leather rollers. Capt. Abney, who has given great attention to these processes, says that the great secret of producing good results is to have the command of first rate rollers. Glazed enamelled paper is generally used for printing half-tone subjects, but in some cases unenamelled paper answers well. The most suitable paper for printing seems to depend partly on the composition of the sensitive surface and partly on the ink.

One of the great drawbacks to the extended use of the photocolotype process for the reproduction of maps is the difficulty of making corrections on the plates. When the printing surface is a metal plate or lithographic stone, upon which a map has been either engraved, zincographed or lithographed, additions and erasures may easily be made without any risk of the loss of the printing surface or even of much damage to it. With the tender gelatine films the case is different, and although writing or simple lines may be inserted without much difficulty, it would be almost impossible to successfully alter gradation of shade or to insert shaded details. On the other hand, the taking out of details must be done by some chemical means which must always be attended with the imminent risk of raising the gelatine film from its support and the consequent utter destruction of the printing plate.

As maps, almost more than any other printed subject, require that it shall always be possible to make corrections on the printing plates, it is obvious that the use of any process which will not permit of this being done must be confined more to the reproduction of maps already printed or of an ephemeral character than to the preparation of new or standard ones. And thus, though photocolotype is admirably adapted for reproducing copies of old or other special maps, which are, or can be, finished once and for all, it is not suited for maps on which corrections are likely to be required.

With the plates prepared as described we have found that details may be inserted by two or three methods. The first is by writing in the required additions on the dry gelatine surface, using an ink composed of bichromate of potash, either alone or coloured with Indian ink. After the insertion of the additions the plate is exposed to the light for a few minutes to reduce the bichromate, and may then be washed and printed as usual.

Or an ink composed of solution of chrome alum may be used and will not require exposure to light. In some cases the part to be corrected may be washed over with a solution of bichromate of potash and allowed to dry, and then the required details may be printed in from another negative.

The taking out of details is more difficult and requires care. It may be accomplished by washing the part with a strongish solution of caustic potash or cyanide of potassium. Should a plate print dirty, it may be cleaned up and greatly improved by being washed with a weak solution of cyanide of potassium, or better, with a solution of citric acid, which not only clears up plates that print dirty, but at the same time facilitates the inking in. A weak solution of ammonia is also said to be useful in this respect.

The process just described was found to answer better in Calcutta for line-work than for half-tones, and for the latter the following formula for the gelatine films appeared preferable:—

Gelatine,	1½ ounce.
Glycerine,	1½ dram.
Albumen,	1 ounce.
Bichromate of Potash,	40 grains.
Chrome Alum,	7 grains.
Water,	12 ounces.

The plates coated with this mixture have to be dried in the dark, but in other respects the operations are much the same.

The processes in which a thick film of gelatine is spread upon a glass plate were found to present in Calcutta many inconveniences in the drying of the films, and the tendency there is in dry weather for the films to peel away from the glass plates and utterly break up and destroy the surface of the latter. There is also the constant risk of breaking the plates in the press. I was therefore led to go back to the old process of Tessié du Mothay and Marechal, in which a thin film of gelatine is supported upon a metal plate, and finally succeeded very well with the following method which I have fully described in the '*Year Book of Photography*' for 1877.

A flat plate of copper, such as used for engraving, is finely grained on its best side, and having been carefully levelled, is washed with warm water and coated on the grained side, while wet, with a mixture composed of—

Gelatine (Nelson's opaque),	15 parts.
Water,	100 „
Bichromate of Potash,	4 „
Formic acid (when the former are dissolved),	4 „

The excess is poured off, so as to leave enough to give a thin even coating. Half an ounce of gelatine is more than sufficient to cover 450 square inches of plate.

The plate is then replaced in the drying box and when dry is ready for exposure to light in the usual way; but it will be found desirable, in order to secure perfect contact, to transfer the negative film on to the gelatine surface in a bath of alcohol as before described.

Formic acid varies in strength and other properties, and if it should be found that the films made by the above formula are too soft, the plates may be kept a few days before printing. The addition of a very small quantity of tartaric acid (about $\frac{1}{10}$ of a part) will improve the films in this respect, and so will the cautious addition of some hardening agent, such as chrome alum, glycerine, glucose, honey, &c.

The printing operations are the same as for the plates already described, but the use of glue rollers and vertical pressure will be found advantageous. The thin films have been found to stand the wear and tear of printing well and to have no tendency to chip or tear away from the plates.

In all cases where the photographic image is impressed directly on the printing surface, a reversed negative must be used, as before explained, and these are sometimes rather troublesome to produce. I have lately tried whether the use of this reversed negative could not be dispensed with in the photocollotype process, by taking the negative in the usual way direct on to the thick ground glass plate and then, while still wet and without varnishing, coating this negative with a thin layer of any of the foregoing mixtures of gelatine, either with or without bichromate. When the sensitive gelatine coating is dry, it is exposed to light through the negative on the under side and allowed to print well through the film. This plan was found to have many conveniences to recommend it, and to answer very well for subjects in line, but not for half-tones. For map-work it has the undoubted advantages of perfect accuracy of scale and the greatest possible sharpness of the image.

The foregoing descriptions will give an idea of these interesting processes which are now being very largely used for producing photographic prints of all kinds, though, I believe, the successful working of them still presents some difficulties, even in better climates than India. Against their employment for map-work on the large scale there will, however, always remain the impossibility of joining up several sections of a large map on the printing surface, the difficulty of reproducing the finest tints of a shaded map with a perfectly clean white ground, and, above all, the difficulty of making additions and corrections on the plates.

The accompanying specimen of a reproduction of an old map of Bengal will give an idea of what may be done by the process described at page 93.

VII. WOODBURY-TYPE.

We have already seen that the great drawback to the production of photographs in printing ink with continuous gradation of shade, by either photography or photo-engraving, is the necessity for breaking up the continuity of gradation by a more or less marked 'grain', and that this difficulty has been overcome by the photocolotype processes.

By a very ingenious process, invented in 1864, Mr. Walter Woodbury succeeded in solving the problem in another way, and, by a mode of operation analogous to 'Nature-Printing', has been able to produce absolutely permanent prints with such perfect photographic gradation, combined with the most exquisite transparent delicacy and richness of tone, that none but the initiated would know that they were not the ordinary silver prints.

A tissue is first made by coating a tough film of collodion with a moderately thick even layer of gelatine and bichromate of potash, slightly coloured in order to see the progress of the development. When dry, the tissue is laid collodion side next to the negative film, and exposed to light proceeding from one direction only, in order to prevent diffused rays acting through the thick gelatine coating and so blurring the image. This tissue of gelatine and collodion is then temporarily attached to a glass plate and treated with hot water, very much in the same way as in the pigment printing process already described. The whole of the gelatine upon which the light has not acted, and which therefore remains soluble, is dissolved away, leaving an image in relief, the highest parts of which represent the deepest shadows of the picture, while the parts intervening, down to the lowest, represent the intermediate gradations between the deepest shadows and the highest lights.

When dry, the gelatine composing this image will be quite hard and capable of resisting the heavy pressure required to indent it into soft metal, without itself being injured.

The tissue bearing the image having been stripped from the temporary support, is laid face downwards on a sheet or block of lead or type-metal, about $\frac{1}{8}$ of an inch thick, between two finely surfaced steel plates and submitted to the pressure of a very powerful hydraulic press. The prominent parts of the relief are thus forced into the soft metal and produce a mould the deeper parts of which represent the shades and the shallower the lights of the picture. As the relief obtained from gelatine and bichromate of potash alone will impart to this mould a smooth surface without grain, such plates could not be printed with printers' ink, like a copper-plate engraving. Mr. Woodbury therefore uses a semi-transparent ink consisting of gelatine coloured with any suitable pigment.

The leaden plate or mould is laid in a suitable press of peculiar construction* and slightly greased. A small quantity of the coloured gelatine having been poured in a liquid state into the middle of the mould, a piece of suitable paper is laid above it and pressed strongly down, so as to force the ink thoroughly into the depressions all over the plate and squeeze out all the ink between the surface of the metal and the paper in the parts forming the highest lights of the picture. The gelatinous ink is allowed a short time to 'set' and attach itself to the paper; the paper is then removed and brings with it a perfect impression of the picture in coloured gelatine, of different thicknesses corresponding in intensity and gradation of shade to the depth in different parts of the plate. The print has now only to be 'fixed' in a solution of alum and when dry is perfectly permanent and ready to be trimmed and mounted.

The rate of impression is about the same as of ordinary copper-plate printing and may be carried on quite independently of the light. If very large numbers are required of a single subject, it is easy to produce as many printing plates as may be required from the original gelatine relief, which may afterwards be put away and kept indefinitely. The cost of printing is exceedingly small and prints are produced in large numbers at a marvelously cheap rate. As the process requires special mechanical appliances and apparatus it has generally been worked on the large scale by public companies.

The Woodbury-type is unfortunately not well adapted for the reproduction of maps, because it has been found very difficult to produce impressions of large dimensions, and, owing to the peculiar method of printing, it is almost impossible to obtain the clear black lines and pure white ground so indispensable in a good map. The prints also have to be mounted, which is an objection. However, in special cases where the work is within the capabilities of the process, it will be found valuable, because it possesses the great advantage over the collotype processes for the reproduction of half-tone subjects that the printing of an almost indefinite number of copies can be carried on with as perfect certainty as in ordinary lithography or engraving, while in beauty, transparency and delicacy of gradation the Woodbury-type prints are undoubtedly superior to collotypes.

VIII. PHOTOGRAPHIC ENGRAVING.

As was noticed in the Introduction, the earliest practical process of photography was a method of photographic engraving invented by Nicéphore Niepce, and since his time nearly every great improvement in photography has been applied to this object. Thus, no sooner was the Daguerre-type invented than essays were made by Fizeau, Donné and others to engrave

* For a drawing of this press, see Abney's *Treatise on Photography*, p. 175.

the images produced on the metal plates. In like manner, the earliest application of the peculiar action of the alkaline bichromates upon colloid substances was Fox Talbot's photoglyphic process, which was soon followed by the photo-galvanographic and helioplatic processes of Pretsch and Poitevin. Engraving processes have also been based upon Swan's pigment-printing process, the Woodbury-type and the collotype. With the exception, perhaps, of the second, all these methods, from the earliest to the latest, are in use at the present time in a more or less modified form.

The object of engraving maps upon copper is to obtain a plate taking but little storage room and not liable to break, which shall yield a large number of impressions of uniform quality and, with due precautions, be capable of being preserved in a good condition for printing during any length of time.

Copper-plates have the further advantage that they may be multiplied to any extent by electrotyping, and corrections may be made when required, either on the original plate or on the electrotyped matrix or copy. Transfers may also be made from them to stone or zinc and printed in the same way as ordinary lithographs. This procedure is specially applicable when very large numbers are required or when the subject is to be printed in colours.

Besides these more practical advantages, the superior beauty and finish of copper-plate engraving give it the preference for all maps of a permanent or standard character.

With these objects in view nearly every civilised nation has at least one engraved map giving the results of the State Surveys on a convenient scale for general use. For the same reasons map-publishers generally engrave the maps composing their atlases and other standard publications.

Notwithstanding its many advantages copper-plate engraving is a very slow process and is also expensive, because the art of the engraver is one requiring great artistic and manipulative skill, only to be fully acquired by an almost life-long apprenticeship. Map-engraving, it is true, does not require so high a degree of artistic skill as line or aquatint engraving, but it nevertheless requires a long training, particularly in the more difficult branch of hill-etching which demands almost as much skill to produce first-rate results as ordinary line-engraving.

Although the advantages of photographic engraving as a means of avoiding the long and costly labour of engraving maps by hand are obvious, for various reasons these processes have not yet come into general use. A successful commencement has, however, been made by the Italian and Austrian Governments of employing photography in the production of their engraved maps, and there is little doubt that before long, photographic engraving will be more extensively used for this purpose than it is at present, especially as processes are now available by which gradation of shade

may be obtained without difficulty, and the expensive hand-work of the engraver in biting in or finishing may to a great extent be dispensed with.

The processes of photographic engraving that have been proposed from time to time for producing incised images on metal plates capable of being printed in the copper-plate press, are very numerous. I shall, however, confine myself to those which have been most successfully worked and of which the details have been more or less fully published. Further information on the subject will be found in the special works referred to in the footnotes, and also in Hammann's "*Des Arts Graphiques destinés à multiplier par l'Impression*" and A. Martin's "*Handbuch der Emailphotographie und der Phototypie oder des Lichtdruckes*," which both give very complete resumés of the early progress in this branch of photography, with details of many of the processes. The Photographic Journals and the Patent Office records may also be consulted.

The principal methods of obtaining an incised image on a metal plate by means of photography are:

1. Obtaining a photographic image on a metal plate coated with asphaltum and then etching or 'biting in' with acid.

2. Obtaining a photographic image in gelatine on a metal plate and etching the latter with some substance that will not attack the gelatine.

3. Obtaining an image by the direct action of light on a metal plate, as in the Daguerreotype process, then forming a metallic reserve to protect either the lights or shadows of the image and etching with a suitable mordant.

4. Electrotyping from a relief obtained by the swelling or partial solution of a chromated gelatine film, either directly or by the intervention of a cast in wax or plaster.

5. Electrotyping from a relief in insoluble gelatine obtained in the same way as in the 'Autotype' or Pigment-printing process.

6. Electrotyping from a leaden plate on which an image has been impressed from a gelatine relief, as in the Woodbury-type process.

7. Electrotyping from a relief obtained directly on a collodion positive cliché.

It will be seen that these methods divide themselves into two principal groups of etching and electrotyping processes.

Etching processes with Asphaltum.—We have already seen that Niepce in his experiments to find a substitute for lithography, made use of the property possessed by bitumen of Judæa, or asphaltum, of becoming insoluble in oil of lavender and other solvents, after exposure to the action of light, to obtain photographic images on metal plates which were then bitten in with acid, so as to form engraved plates, usually copies of engravings, though he also obtained images from nature.

Owing to the imperfection of photographic appliances in those early days of the art, the results obtained by Niepce could not have been very satisfactory, but with better appliances the same process has yielded in the hands of Niepce de St. Victor, the nephew of the inventor, Amand Durand and others, results which prove its practicability, and its capabilities for reproducing images direct from nature or for copying fine line engravings and similar subjects, for which latter it is much better adapted.*

A process on this principle has been very successfully used at the Imperial State-Printing Office, Berlin, for the engraving of plates for bank notes and other purposes, and I have also tried it myself with fair success.

The following outline will give an idea of the operations.†

A perfectly smooth copper plate, having been thoroughly cleaned and polished, is coated with a solution of asphaltum in turpentine, to which a little oil of lemon is added. It is then carefully dried in the dark so as to preserve an even coating, free from dust.

The image may be impressed upon the sensitive surface by sun-printing through an ordinary negative on glass, but as there is by this plan great risk of losing perfect sharpness by want of close contact between the glass and the copper plate, it is better to remove the collodion film from the negative and transfer it on to the surface of the asphaltum, so that it may be in absolute contact with it all over, and thus secure the utmost possible sharpness of the image. The collodion film is loosened from the glass in an acid bath, containing 1 part each of sulphuric and acetic acids in 320 parts of water, and the transfer is then effected in a bath of 1 part glycerine and 4 parts of water. The transferred film being dry, the plate is ready to be exposed to light, and as the asphaltum is not very sensitive, the exposure is somewhat long—extending from 6 to 36 hours; but it is better to over-expose and to work in diffused day-light rather than in the full sunshine.

When the plate is judged to have been sufficiently exposed, the collodion film is removed and the asphaltum surface is rubbed lightly with a tuft of cotton dipped in olive oil, to which after a short time a little turpentine is added. The image gradually begins to appear, and by degrees the unaltered asphaltum is all removed, so that the design appears in clear brown upon the polished copper. The plate is then washed with soap and water and allowed to dry.

The next operation is the etching or biting in of the image. The back of the plate having been well coated with a thick varnish of asphaltum, to protect it from the action of the acid, the plate is plunged into a trough

* See '*Traité pratique de Gravure Héliographique sur Acier et sur Verre*', par M. Niepce de St. Victor.

† Full details will be found in my '*Report on the Cartographic Applications of Photography*,' p. 79.

containing a mixture of 1 part chlorate of potash, 10 parts muriatic acid and 48 parts water, and allowed to remain till the weakest lines of the drawing begin to appear. It is then well washed and the asphaltum covering the lines is removed with benzole. The design will now be seen standing in a slight relief, and an electrotype must be made in order to obtain a printing plate from which impressions may be taken in the ordinary way. The sharpness of the lines is better preserved by making a relief and electrotyping, than it would be by biting in.

The best results by this process are obtained from subjects in line, and even with these the operation of 'biting in' demands a little manipulative skill. Good results have, however, been obtained in reproducing half-tone subjects, but they require the greatest skill on the part of the manipulator and generally much re-touching by a practised engraver.

A modification of Niepce's process, by which good results have been obtained, has been introduced by M. Nègre, it is briefly as follows:

A plate of steel is covered with a coating of bitumen or bichromated gelatine and exposed to light under a negative. After development by a suitable solvent, which removes the parts not acted on by light, the plate is placed in a solution of gold and, by means of a galvanic battery, a thin regular coating of gold is deposited on those parts which present a clean metallic surface; the remainder of the sensitive coating is then removed, and a beautiful damascened design in gold is obtained. The gold adheres well to the metal surface and as it is not attacked by the etching liquid, the design may be etched without injuring the ground of the plate.

This process also appears only suitable for line work, though it is said that satisfactory results in half-tone have been obtained with it.

M. Baldus, of Paris, is said to have used a similar process, but to have etched his plates in a solution of sulphate of copper by attaching them to the positive pole of a galvanic battery.

The processes dependent on the use of asphaltum are all more or less slow and uncertain in practice, and if not already quite abandoned in favour of the quicker and more certain processes dependent on the use of gelatine and bichromate of potash, are rapidly becoming so, especially as their usefulness is almost entirely confined to reproducing subjects in line. Exceedingly fine results can, however, be produced in this manner, and it is particularly valuable in cases where an 'etching' or 'biting in' process is required, because the bitumen forms a much better 'resist' for the acid or etching liquid than does gelatine, as we shall now see.

Etching processes with Gelatine.—In 1852, Mr. Henry Fox Talbot brought forward a method of photographic engraving called 'Photoglyphy,' which is of some interest as being the first practical photographic process founded on Ponton's discovery of the decomposition of bichromate of

potash in contact with organic matter under the influence of light. Talbot found that by the action of light, a dried film of gelatine mixed with an alkaline bichromate became impermeable to certain fluids in proportion to the intensity of the action of the light upon it. He coated steel plates with a thin film of gelatine and bichromate of potash, and after exposure to the light under a photographic positive, he etched the image so produced with a solution of bichloride of platinum which, penetrating the unaltered gelatine in the parts protected from the light and attacking the underlying metal, produced the shadows of the resulting picture. Some very promising results were obtained in this manner, and great expectations were entertained of its utility in producing engraved plates for book illustration and other purposes. These hopes, however, have not been fulfilled and the process, though remarkable as the first of the many valuable methods of photographic press-printing dependent on the use of gelatine and the alkaline bichromates, has inherent defects and difficulties which seem to render it of little practical value.*

M. Baldus has successfully employed a modification of the photographic process for line-work.† He coats a copper-plate with gelatine and bichromate and exposes it under a negative or a positive, then etches in a solution of perchloride of iron, which attacks the copper in all the parts not acted upon by the light, and thus a first relief is obtained. As this relief is not sufficient, the plate is inked in with a printing roller, when the ink attaches itself to the parts in relief and protects them from the action of the etching liquid. This procedure is repeated till the desired effect is produced. If a negative is used an incised plate is obtained, which may be printed in the copper-plate press. If a positive is used the image is in relief and suitable for being printed with type. I have found that the reliefs obtained in this way are exceedingly sharp, though the gelatine films will not stand the action of the etching fluid for very long.

Messrs. Leitch and Co., of London, have lately introduced a similar process, called by them 'Photogravure.' It appears to be due to M. Garnier, who has had great experience in these processes and produced some very fine results. The method of working is a secret, but it is said that a metal plate is coated with a sensitive composition capable of resisting the action of acids. The photographic image is impressed on the sensitive surface through a negative and is then etched with perchloride of iron. The etching is said to be to a certain extent automatic, that is to say, the etching action on the lines ceases at different periods in proportion to their fineness.

* A full description of Talbot's process, with specimens, will be found in the appendix to the English translation of Tissandier's '*History and Handbook of Photography*,' edited by J. Thomson.

† See the above work, p. 207.

Daguerreotype Etching.—Many attempts have been made to engrave the beautiful and delicate photographic image formed on the Daguerreotype plate. Thus, Donn  simply etched the image with dilute nitric acid, which attacked the silver forming the shadows, leaving the whites protected by the mercury untouched. Grove etched the plates with the aid of the galvanic battery. Fizeau first etched as deeply as possible with dilute muriatic acid and then, having filled up the hollows with drying oil, deposited gold upon the lights; the oil having then been removed, the plate was bitten with dilute nitric acid. In order to render the silver plate more capable of standing the wear and tear of printing it was covered with a thin film of copper, which could easily be removed and renewed when required.

Other processes were also put forward, but they all failed, from the difficulty of biting the image to a sufficient depth and of obtaining the requisite 'grain' to enable a large number of impressions to be pulled off. None of them seem to have ever come into practical use and, like the Daguerreotype, they have almost fallen into oblivion.

If with the superior knowledge and appliances of the present day, any such process could be successfully worked, it would probably offer many advantages over any other etching process, especially for maps and other works in line.

Several ingenious processes of chemical engraving applicable to photography have been proposed by Messrs. Garnier and Salmon, Vial, Dulos and others; but as they do not appear to have come into practical use, it will be unnecessary to enter into details regarding them. Descriptions of them will be found in Roret's '*Manuel du Graveur*'.

Though they have the advantage of rapidity, all these processes, in which the image is obtained by etching or biting in with acids or other etching fluids, are open to the objection that for all subjects containing fine and delicate lines the etching and stopping out require almost the same manipulative skill and care as in ordinary engraving, and the processes consequently become expensive to work. There is also a tendency for the lines to become coarse and heavy. In those gelatine processes in which the etching fluid acts through the gelatine it gradually loosens the latter from its support and attacks the parts which should not be bitten at all. These defects are to a great extent obviated in the processes we are now about to consider, in which the printing plates are produced by the electro-deposition of copper on the photographic image.

Electrotyping methods.—In nearly all the electrotyping methods the printing plate is obtained by depositing copper on a gelatine relief obtained by the agency of light, or on a cast in plaster, gutta-percha, &c. taken from such a gelatine relief.

If a dry film of chromated gelatine on a suitable support be exposed to

light under a photographic cliché, and then plunged into hot water, the parts acted on by light being insoluble will remain on the support in different degrees of relief according to the intensity of the light, while the unexposed parts will be washed away. An image in high relief formed of hard and insoluble gelatine will thus be obtained, from which a cast or electrotype in intaglio may be made.

If, however, instead of using hot water, the plate be plunged into cold water, the gelatine will be found to absorb water and swell up in the parts protected from the light, while in the parts acted on by the light it will only slightly absorb the water, and these parts will thus form hollows. The power of absorbing water will also be found to be in exact proportion to the degree of protection from light. In this case, an image in low relief is obtained which may also be moulded from, or electrotyped.

Upon these two principles several processes of producing printing-plates both for copper-plate and letter-press printing have been founded with more or less success.

The first process of the kind was Paul Pretsch's 'Photogalvanography', invented in 1854. He appears at first to have obtained his plates by coating a glass with gelatine and bichromate, exposing to light and then washing away the soluble gelatine and taking a mould of the resulting relief, in gutta-percha, from which an electrotype was made in the usual manner.*

This process gave fair results both in line and half-tone, but, owing to the washing away of the soluble gelatine being effected on the side of the film exposed to light, the plates were defective and required a good deal of touching up by skilled engravers, which vastly increased the expense of their production. The process failed as a commercial speculation.

Almost immediately afterwards, in 1855, Poitevin published methods of obtaining plates from the gelatine reliefs obtained by swelling the sensitive films in cold water. Plaster casts were either made from them or the gelatine surface itself was metallised and electrotyped in the usual way.†

This method produced tolerable results, though the prints were always somewhat coarse, owing to the fact that swollen gelatine will not give the same sharpness as when dry.

Both these processes were more or less unsuitable for reproducing subjects in half-tone—Pretsch's because in the process of washing away the soluble gelatine, the lighter half-tones were liable to be lost—Poitevin's because of the difficulty of keeping the swelling in proper relative proportion, owing to more absorbent parts of the film lying underneath less absorbent parts. Both processes also failed to give the necessary 'grain,' without which the proper inking of the engraved plates could not be effected.

* See '*Journal of the Photographic Society of London*,' Vol. III, p. 58.

† See '*Traité de l'impression photographique sans sels d'argent*,' p. 49.

Various attempts were made to improve on these processes, but unsuccessfully, until M. Placet showed that it was necessary to adopt in them the same principle of exposing on one side of the gelatine film and developing on the other, which, as we have seen, had previously been shown to be necessary for the preservation of the half-tones in the pigment-printing process, and for a similar reason.

M. Placet indicated several ingenious ways of obtaining his results.* They may, however, be briefly summed up as follows:

A film of chromated gelatine is exposed under a transmitted positive cliché, so that the light acts on the under side of the film; this is done either by covering the collodion side of the cliché itself with the sensitive coating, or by using a thin transparent sheet of transfer collodion or mica as a support for it. After exposure to the light, the film is soaked in water, whereupon those parts which have been protected from the light swell up in proportion to the amount of the action of light upon them. By treating the mould in relief thus obtained with metallic solutions, an electrotype copy in copper may be produced, which can be printed from in the copper-plate press.

If a negative cliché is used, the unaltered gelatine must be dissolved or a second electrotype must be made.

M. Placet also suggested the employment of a sensitive surface which would become soluble under the influence of light, such as a mixture of gelatine, or other colloid, with perchloride of iron and tartaric acid, as recommended by Poitevin for pigment-printing. In this case the solvent acting on the exposed side hollows out the image, in the same way as an etching fluid does on copper, but with the advantage that each line has only the exact strength given to it by the intensity of the cliché. Or the altered parts of the gelatine film may simply be swollen with cold water, producing an image in relief. In either case, a mould is taken from the gelatine and electrotyped, or copper may be deposited on the gelatine itself.

By his process M. Placet was able to obtain very perfect gradation of shade in the half-tones of his pictures, with a fine natural grain produced by some means which he did not divulge. He has lately, however, described a method of producing the grain, which consists in plunging the gelatine plate into a solution of bichromate of potash and then treating it with a solution of protosulphate of iron containing acetic acid.† The principle he lays down is first to treat the gelatine with a solvent and then with a solution of some substance that will tan or contract it.

Messrs. Fontaine, Avet and Drivet have also proposed similar processes, in which they have partially overcome the difficulty of obtaining a proper

* See Davanne, '*Les Progrès de la Photographie*,' p. 185.

† See '*Bulletin de la Soc. Franc. de Photographie*,' Vol. XXIII, p. 130.

'grain' by interposing between the cliché and the gelatine film a fine network or an impression of an engraved or roulette tint; but these artificial grains have a disagreeable effect, and the methods seem to have fallen into disuse, except for line-work and photo-typography, which will be described further on. Avet's process is, however, I believe, still in use for producing the maps of the Italian Surveys.

Geymet's method.—The fourth method, that of electrotyping from a gelatine relief obtained by the pigment-printing process, is somewhat similar in principle to Placet's process, but as there are important differences and the process appears likely to prove of some utility, it may well be treated separately.

According to M. Geymet, who has very fully described the process and all the manipulations of preparing and electrotyping the reliefs in his "*Gravure Héliographique*," it was the invention of M. Audra, a French amateur.

Pigmented gelatine tissue is sensitised and exposed to light exactly in the manner described at p. 78 for the 'Autotype' process. It is transferred to a smooth glass or a polished copper plate, developed in warm water, and when dry is metallised and electrotyped. If the subject is one in line or dot only the above operations are sufficient, but if the subject is a photograph from nature, or any other with gradation of shade, it is necessary to obtain a 'grain', and this M. Geymet does by taking a copper-plate with its surface grained or engraved with a ruled or roulette tint, inking it up in the ordinary way and then covering it with a coating of transfer collodion. When dry, the film of collodion is stripped off the plate and carries with it the impression of the grain. This film is then placed between the cliché and the sensitive gelatine film and serves to break up the shadows in the more transparent parts of the cliché.

A similar process has been used at the *Depôt de la Guerre*, in Belgium, for the reproduction of maps.*

Last year, whilst making some experiments on this process, I succeeded in obtaining the necessary 'grain' by chemical means which produce a finer and less artificial effect, and I have also made a few other modifications in the process, which may be worth recording at length.

A piece of the ordinary autotype tissue is sensitised in a 5 per cent solution of bichromate of potash. When dry, it is exposed to light under a reversed negative and then transferred in cold water to the surface of a well polished copper plate and squeegeed down into close contact with it. In order to prevent subsequent adherence to the newly deposited copper in the electrotyping bath, the copper plate is silvered by rubbing it with a little of the following solution mixed with tripoli.

* See Maës and Hannot '*Traité de Topographie, &c.*' p. 330.

Nitrate of Silver,	1	part.
Cyanide of Potassium,	10	„
Water,	100	„

The gelatine tissue attached to the copper plate is allowed to dry, and then developed in warm water in the usual manner, great care being taken not to loosen the lines, an accident which is very liable to happen, though the preliminary drying of the tissue before development tends to prevent it.

When the image is quite clear from all soluble gelatine, the plate is well drained and plunged into a bath containing—

Tannin,	5	parts.
Strong Spirits-of-wine,	100	„

This at once removes all moisture from the gelatine relief, hardens it, and gives it a fine grain, coarser in the shadows than in the lights. The plate remains a few minutes in this bath till the action is complete in the deepest shadows; the tannin is then washed off with a little spirits-of-wine, and the plate is allowed to dry.

The gelatine relief has now to be prepared for receiving the electrotype deposit. A band of copper having been soldered to it, the back of the plate is coated with Brunswick black, to prevent deposition of the copper upon it. When the backing is dry, the margins of the picture are cleaned with a little of the silvering solution. The gelatine surface then receives a very slight coating of wax dissolved in turpentine, which is well polished off, and is rubbed over with fine plumbago or silver-bronze powder to render the surface conducting. The plate is then ready to be placed in the depositing bath.

Any good electrotyping arrangement may be used, but I prefer a Smee's battery with a separate depositing trough, containing a solution of 10 parts each of sulphate of copper and sulphuric acid in 100 parts of water.

A plate of copper, to serve as an anode and connected with the silver plate of the battery, is laid horizontally about an inch above the bottom of the depositing trough which should be large enough to allow the plate bearing the gelatine relief to be slipped under the anode. The relief-plate is connected with the zinc plates of the battery and, when everything else is ready, the circuit is completed by slipping it into the depositing trough under the anode. By laying the plates horizontally in this manner the deposit is more even and the gelatine film seems to be more readily covered with copper.

When the deposit of copper is of sufficient thickness it is separated from the matrix, and only requires a gentle 'oil-rubbing' to be fit for printing.

The plates obtained by this method show very good half-tone with an almost imperceptible grain, giving the effect of a fine chalk-drawing.

I have lately tried to obtain the images upon the copper by the double transfer process, making use of a flexible temporary support, consisting of paper coated with india-rubber, as first proposed by Swan, which can easily be removed with benzole after the transfer of the gelatine image to the copper. The 'grain' is given to the image by soaking it in water after the removal of the india-rubber paper, and then applying the solution of tannin in alcohol. This plan seems likely to be successful, if so, it will greatly simplify the operations and enable engraved plates to be obtained from any ordinary negative without the trouble of reversing.

By electrotyping direct from the gelatine relief, the results are always rather heavier and coarser than they should be, because, although hardened and insoluble, the gelatine relief can always absorb a little of the copper solution in the depositing trough and consequently the image swells and loses sharpness.

The strong tanning given to the gelatine film and the preliminary coating of wax before metallising the surface obviate this defect to a considerable extent; but it may perhaps be better to obtain a matrix in lead by pressure from the gelatine relief, and then to obtain the printing plate by electrotyping twice from the lead matrix. This is a more round-about and expensive method, but is likely to yield finer results and has been adopted by Woodbury and Rousselon in the processes next to be considered.

The process is simple and if it could be successfully worked out it might be usefully employed in this country in reproducing shaded maps and for other miscellaneous purposes. It has the very great advantage over photo-collotype that the plates can be corrected, if necessary, and can be printed in any numbers in the ordinary copper-plate press without risk of breakage or damage to the printing surface.

Woodbury-type methods.—It has already been shown that in the Woodbury-type process the photographic image is impressed into a soft metal plate by means of a relief in insoluble gelatine on a collodion support, and that instead of impressions being printed in ordinary printers' ink they are made in coloured gelatine. In such prints the gradation of shade is continuous and there is no perceptible grain.

Mr. Woodbury has proposed an ingenious method for obtaining gelatine reliefs with a granular surface, so that, when impressed into soft metal, electrotypes in copper may be obtained from the latter, which will serve as printing-plates for printing with printers' ink in the copper-plate press, and yield superior results to those obtained by electrotyping immediately from the gelatine relief.

A plate of glass is waxed and coated with a thin film of collodion, and a

mixture of gelatine and bichromate of potash, containing a quantity of fine emery, powdered glass or charcoal is poured over it and allowed to 'set'. The gelatine film is then dried and taken from the glass, and the collodion side exposed beneath a negative. After a sufficient exposure, it is temporarily attached, on the collodion side, with india-rubber solution, to a sheet of glass and washed in warm water.

The resulting granular image is then pressed into a sheet of soft metal by means of the hydraulic press. The soft metal plate has an electrotpe made from it in copper, and another plate, subsequently covered with a coating of iron, is again made from this to serve as the printing-plate, the first copper plate being kept as a reserve.*

Mr. Woodbury also describes another method which in some respects resembles Geymet's, before described.

Paper is successively coated with three or more mixtures of gelatine, bichromate of potash and some granular substance in different degrees of fineness—first with the coarsest and lastly with the finest. When dry, the tissue is exposed under a negative, transferred under water to a finely polished plate of zinc or steel, then washed in warm water as usual, and when dry is ready for pressure into the soft metal block. In this case, the light tones are composed of the finest grains and the shadows of the coarsest.

M. Rousselon, the manager of Messrs. Goupil's photographic works at Asnières, near Paris, has obtained engraved plates with remarkably good half-tones by a process somewhat similar to the Woodbury-type, which is also largely worked by Messrs. Goupil. The peculiarity is in the grain, which is obtained by the addition to the sensitive mixture of gelatine and bichromate of some substance which has the property of causing the film to become granular under the influence of light, the granular effect being increased in proportion to the intensity of action of the light. The other operations are the same as in the first of Mr. Woodbury's processes just described. The details of this process are a secret, but it is said that the substance used for producing the grain is chloride of calcium.

I am not aware of either Woodbury's or Rousselon's processes being utilised for the reproduction of maps, but in certain cases they could, no doubt, be usefully employed. The only difficulty seems to be that an immensely powerful hydraulic press is required for large subjects.

Photo-mezzotint.—The Editor of the '*British Journal of Photography*' has lately suggested a process of photo-mezzotint engraving founded on the 'dusting on' or 'powder' process, already alluded to.†

A polished steel plate is thinly coated with—

* '*British Journal Photographic Almanac*, 1872, p. 40.

† '*British Journal of Photography*, Vol. XXIV, p. 170.

Saturated solution of bichromate of ammonia,...	5	drachms.
Honey,.....	3	"
Albumen,.....	3	"
Water,.....	1½	pint.

When the coating is thoroughly dry, the plate is exposed to light under a transparency. A large camel's hair brush is charged with a mixture of the two finest kinds of emery powder, and applied with a circular whisking motion all over the surface. The powder attaches itself to those parts of the plate on which the light has not acted, precisely in proportion to the amount of protection they have received, owing to the unaltered parts of the film attracting moisture and becoming 'tacky.' The most 'tacky' parts, forming the deep shadows of the picture, will attract the coarsest particles of the emery, the finer parts will take finer emery and the highest lights will take none at all. When the picture is fully developed, it is placed face to face against a polished plate of softer metal and passed between a pair of rollers, so that the emery powder image may be indented into the polished metal. The plate is then burnished in parts by a skilled engraver and when the desired result is obtained, is printed in the usual way in the copper-plate press.

This process seems capable of rendering useful service in the reproduction of maps.

Scamoni's method.—The last method is that recommended by Herr G. Scamoni, of the Imperial Russian State-paper Office, and is fully described in his '*Handbuch der Heliographie*,' already referred to. The results are exceedingly good, but the process is only suitable for line work.

Herr Scamoni having obtained a suitable negative of a drawing or other line subject, makes a positive copy of it in the camera by the wet collodion process, and after fixing, treats this positive with various successive intensifying solutions, so as to give it a very sensible relief. After drying the plate is varnished with a thin varnish and coated with fine plumbago, after which it is electrotyped in the usual way.

In the specimens I have seen of this process the lines are exceedingly sharp and fine, and it would seem well adapted for map-work.

A photo-mechanical process has lately been introduced by Messrs. Aubel and Kaiser of Lindenhöhe, near Cologne, and called '*Aubeldruck*.' The results for line-work are very superior but the process is a secret. It is believed to consist in some method of etching a glass negative, so that prints may be obtained direct from the glass surface or by transfer to stone.

In all cases where the printing-plates are obtained by electro-deposition of copper, and many copies are required, it is necessary to protect the engraved surface of the plate with a coating of iron by the process known as '*acierage*' or '*steel facing*.' This enables a very large number of copies

to be printed without deterioration of the plate, and the coating can easily be removed and renewed whenever required. Details will be found in Ure's '*Dictionary of Arts, Manufactures and Mines*,' article ENGRAVING.

IX. PHOTO-TYPOGRAPHY.

The object of the photo-typographic processes is to obtain a surface block by photographic agency, that may be set up with type in the same way as woodcut, stereotyped or electrotyped blocks, and be printed in the ordinary printing press. The process offers great advantages in the rapidity with which the blocks may be made and printed off in large numbers. Up to the present time no entirely satisfactory method has been discovered for printing subjects in half-tones in this way, though Mr. Duncan Dallas has produced some very promising results. The processes are, therefore, almost entirely limited to the reproduction of subjects in line or dot alone.

The operations in this branch of photographic reproduction are based upon exactly the same principles as the photo-engraving processes just considered, and in some of them the only difference is the substitution of a positive cliché for a negative, or *vice versa*.

The existing processes may be divided into three classes :

- 1st. Those in which a mould is made from a relief in swollen gelatine.
- 2nd. Those in which the image is obtained in asphaltum or gelatine on a metal plate and bitten in.
- 3rd. Those in which an image in a waxy and resinous ink is obtained by the methods described under the head of photozincography, then transferred to a metal plate and bitten in.

Moulding Processes.—Of the first class several methods have been introduced from time to time, but they are all on the same principle and are modifications of Pretsch's and Poitevin's processes already described, differing, as a rule, merely in technicalities which being trade secrets have not been fully published.

The following method is a typical one. A glass plate or other suitable surface is coated with a mixture of gelatine and bichromate of potash and when dry exposed to light under a negative. After this, it is immersed in cold water till the parts unaltered by the light, which represent the whites of the original drawing, swell up to the required height, leaving the lines quite sunk. The plate is then removed from the water and, the superfluous moisture having been carefully blotted off, is ready to have a cast made from it.

This may be done in two ways first, by metallising the gelatine surface either by means of plumbago or bronze powder, or by reducing silver upon it by applying a solution of nitrate of silver followed by treatment with a

solution of pyrogallic acid or of phosphorus in bisulphide of carbon. The gelatine relief then receives a thin deposit of copper in the usual way. The thin copper electrotype is backed up with type metal, planed and mounted on a wooden block so as to be of the height of type.

This method gives the finest results but takes time.

The second method is to take a cast of the gelatine relief in type-metal. A cast in plaster, wax, &c. must first be taken from the gelatine, a second cast in plaster is made from this, and then stereotyped in the usual manner. This method is quicker than the last, but the results are coarser.

These processes are now largely used for illustrations in books and newspapers, but, so far as I know, have not been regularly applied to the reproduction of maps.

Etching processes.—The processes in the second class, in which a metal plate on which the image has been obtained on a sensitive coating of asphaltum or gelatine is bitten in with an etching liquid, though capable of giving very perfect results, are not, I believe, so much used as the other methods which are quicker and more simple.

A photographic image is impressed from a reversed negative on a copper or zinc plate prepared as in the Berlin engraving process described at p. 103, and, after development with olive oil and turpentine, is bitten in so as to yield an image in sufficiently high relief for surface printing, the precaution being taken of protecting the finest parts of the work as soon as they are sufficiently bitten, by covering them with stopping-out varnish.

If the sensitive surface is chromated gelatine, the soluble gelatine may be removed or not, but the etching fluid must be such that it will not dissolve or remove the gelatine from the surface of the plate—solutions of perchloride of iron, bichloride of platinum, nitrate of silver in alcohol, bichromate of ammonia in dilute sulphuric acid are some of the most suitable mordants for the purpose. In any case, the full amount of relief cannot be obtained through the gelatine at one operation. After the first biting-in the gelatine film must be removed and the lines protected from the further action of the etching fluid.

Gillotage.—The last class, in which a photographic transfer in resinous ink is made on a metal plate, and then bitten in, comprises the simplest and most largely used of these processes.

The process generally employed is substantially the same as Gillot's "paniconography", now commonly called 'Gillotage,' which is largely used for illustrated papers and various other purposes.

A polished zinc plate, which has been strongly varnished at the back to protect it from the acid in the subsequent operations, receives a transfer in greasy ink, either from an engraved copper plate, a lithographic drawing on paper, or a photo-transfer print prepared as for photozincography.

The plate is then etched in the usual way and rolled up with a varnish ink, containing a large proportion of resinous matter ; it is then dusted with powdered resin, which sticks to the lines and renders them more capable of resisting the acid ; the superfluous resin is brushed off and the plate is gently heated.

The edges of the plate and the large white spaces are covered with shellac varnish and when the varnish is thoroughly dry, the plate is plunged into a trough containing very weak dilute nitric acid, kept in constant motion, and is left until the finest parts are sufficiently bitten, which generally takes about a quarter of an hour ; it is then taken out of the trough, washed, dried, and placed on a sort of grating over a charcoal fire. Under the influence of the heat, the coating of ink and resin on the lines, being gently softened, flows down and protects the sides of the hollows formed by the first biting, filling up the spaces where the lines are very close. As soon as this effect is produced the plate is allowed to cool and then inked with a lithographic roller, as if a proof was going to be pulled. It is again dusted with powdered resin, and is then ready for a second biting in, which is to attack the parts somewhat lighter, and therefore may be effected with stronger acid.

The operations of inking, dusting with resin, heating and biting with acid are repeated several times till the plate presents only a uniform black colour. Then the plate is bitten with strong dilute acid which bites out the parts to be left completely white. The large whites, which have been covered all along with a strong shellac varnish, are then cut out with a saw, and the plate is ready to be mounted on a wooden or leaden block for printing. These plates usually require considerable touching up to take off the ragged edges of the lines caused by the spreading of the ink, though this may also be done by repeating the inking and biting in, so as to remove the steps formed by the successive bitings.*

This process has been applied at the Imprimerie Nationale, Paris, for producing large geological maps, but the special precautions that had to be taken in "overlying" the plates in the press so as to print properly were very tedious, and must have largely increased the expense and lessened the use of the process. Messrs. Yves and Barret, of Paris, are said to use it largely for reproducing maps and engineers' plans, &c.

Photo-blocks in half-tone.—Many attempts have been made from time to time to obtain surface blocks from photographs from nature and other shaded subjects, but with imperfect success. If this object could be successfully attained, it is easy to understand that it would be of immense value for book and newspaper illustration and many other purposes. There are, unfortunately two grave difficulties to be overcome—one caused

* See Davanno, '*Les Progrès de la Photographie*,' p. 201.

by the fact that to produce a successful printing block the surface of all the lines or dots which receive the ink must be very nearly on one uniform level, and therefore the moulding processes above described are inapplicable. The second and greater difficulty is to obtain a suitable grain to break up the continuous gradation of shade in the photograph.

M. Rodriguez, of Lisbon, has proposed an ingenious method by which promising results have been obtained. He makes a paste of sugar of milk, or some other substance in powder soluble in nitric acid, with a little oil of lavender and bitumen, and adds a sufficient quantity of it to a solution of bitumen in turpentine. The metal plate is thinly coated with this in the ordinary way, exposed to light and developed with turpentine. The plate is then plunged into a bath of dilute nitric acid which gradually penetrates the resinous coating and dissolves the substance used for forming the grain, breaking up the preparation more or less according to the thickness of the bitumen, and thus reproduces the half-tints of the originals.*

In many processes of collotype the gelatine film presents a very marked grain, which may be coarse or fine according to the composition employed. It is probable, though I have not tried it nor, so far as I can recollect, seen it proposed, that blocks showing very fair half-tone could be obtained by taking a print from such a plate with a grain, transferring it to zinc and then biting it in by a method similar to Gillot's already described. Very great care would have to be taken in the successive etchings to preserve the uniformity of surface and protect the finest tints from being bitten too much.

The prints in half-tone obtained by Mr. D. Dallas' process, known as "Dallastint", appear to have been produced by some such method. This, however, is only a conjecture on my part, because no details of the process have been published.

M. Rousselon has, I believe, obtained fair results by similar transfers from his engraved plates, and it is probable also that a transfer to zinc from one of the plates, prepared by the modification proposed by myself of Geymet's photo-engraving process, bitten in in the same way, might also answer the purpose, though the grain is perhaps scarcely strong enough.

Details of several of the methods of photo-typography will be found in Motteroz's "*Essai sur les gravures chimiques en relief*" and Scherer's "*Lehrbuch der Chemigraphie*."

X. MISCELLANEOUS PROCESSES.

In addition to the processes by which photographic prints are obtained directly by the aid of light, there are several ways in which photography can be employed as a useful auxiliary in obtaining correct tracings for the

* See '*Bulletin de la Soc. Franc. de Photographie*,' pp 208, 254.

use of the draughtsman, engraver or lithographer, thus saving all the labour of hand-tracing and obtaining also a far more accurate image than could possibly be obtained in any other way.

Blue-Prints.—It is well known that when photographed a pale blue colour acts exactly as if it were white. If, therefore, we can obtain by photography an accurate image of any original drawing or other subject in pale blue ink, either on the same, an enlarged or reduced scale, it will be possible to redraw the whole or part with black ink over the blue print, in a style suitable to be again reproduced by photography, without fear of obtaining a double image. It will also be obvious that the blue ground-work will be more complete and more accurate than any tracing by hand or pantograph could possibly be.

It has already been stated that this method has been extensively used in the Survey of India for making reductions of maps to smaller scales, and at the same time generalising the details on the large-scale maps so as to adapt them to and render them more suitable for the smaller scale.

The same system may be applied to the production of maps or plans in several colours, thus: supposing a map is to be reduced and printed in three colours, black for the outline and names, brown for the hills, and blue for the streams and other water.

Three blue prints are given to the draughtsman who draws on the first only the outline and names, on the second the hills, and on the third the water. These three drawings are then very carefully photographed all on the same scale, and transfers are made from them on to three stones or zinc plates, which are then used for printing the different colours of the map just as in ordinary chromo-lithography.

There is no limit to the number of colours that may be employed, and as the blue-prints are all on the same scale, very perfect 'register' may be secured, if due care be taken in the drawing and subsequent photographic operations.

The advantage of using photo-zincography for preparing the blue-prints is that in reducing a large-scale map, the transfers of the several sections may be joined together and printed off in one sheet, and thus may be redrawn in a more complete manner than if the sections had each to be drawn separately and afterwards joined up.

It is not, however, always desirable or possible to obtain the blue prints by photozincography, and they may be obtained in a more direct manner by coating paper with bichromate of potash and gelatine, exposing under a negative, well washing the print with hot water to dissolve the gelatine, then steeping it in a solution of proto-sulphate of iron, again well washing and then applying a solution of ferrocyanide of potassium, and finally well washing. A pale blue print is thus obtained which will answer

every purpose. The 'cyanotype' process, before described, might also be used, but the blue is much more intense and would be liable to produce a double image on the copy.

Besides its uses in the Survey Department, the blue-print method is also appreciated and utilised by engineers and other public officers in India, who desire from time to time to show alterations or improvements on a standard plan, or wish to make use of a standard map for showing their own special requirements.

Bichromate-prints.—In the case of miscellaneous subjects which it is desirable to lithograph, photography can also be usefully applied in giving the lithographic draughtsman an accurate tracing over which he may make his transfer-drawing in the usual way. This was formerly done by making a silver-print on the required scale, and then either tracing over it on lithographic tracing-transfer paper, or coating the print itself with the composition used for lithographic transfer paper and re-drawing on the print itself; but in either case, the dark colour of the photograph interferes very much with the drawing.

A method of overcoming this difficulty has been suggested by Mr. Fraser S. Crawford of the Government Photo-lithographic Office, Adelaide, S. Australia, and has proved exceedingly useful here in Calcutta. A print is taken from the negative, on the paper prepared with gelatine and bichromate of potash for the photozincographic transfers, but it must be printed as deeply as possible, so that the lines may remain clearly visible after the bichromate has been washed out. Instead of inking the print, it is simply washed till all the soluble bichromate is removed, and is then dried. The surface of the print is coated with the ordinary composition of starch or isinglass used for preparing lithographic transfer paper and, according as the drawing is to be executed with the pen or chalk, receives a smooth or grained surface by passing it through the press either on a polished or grained copper plate. The draughtsman then makes his drawing with autographic ink or lithographic chalk over the faint russet image on the photographic print. An ordinary silver-print can be given as a guide in cases where the bichromate print is not sufficiently distinct for the details to be easily made out. This method is very suitable for copying maps, sketches, or photographs from nature, especially if the former are to be on a smaller scale than the original. The light colour of the photographic print renders it easy to see the effect of the drawing above it. The saving of time and labour in tracing and the superior accuracy of the ground-work are also great advantages gained by its use.

Photographing on Stone.—The following method of photographing direct on stone may sometimes be of use with the same object, when the lithographic drawing is to be made on the stone itself and not transferred.

The surface of the stone is made as level as possible and carefully polished, it is then washed with an 8 per cent solution of chloride of calcium and dried. A 12 per cent solution of nitrate of silver is then washed over the stone in the dark, and when dry it is exposed to light under a reversed negative. The print is fixed with a 20 per cent solution of hyposulphite of soda, and then well washed with plenty of water to remove all traces of the hyposulphite.

This method is used at the Topographical Department at the Hague to give the ground-work for the beautifully engraved chromo-lithographed maps of the Dutch Netherlands, and for the reproduction of photographs of Dutch artillery material, by a similar system of engraving upon stone permitting several shades of the same tint to be printed from one stone.*

Photographing on Copper.—A photographic image may also be obtained upon a copper plate by the following method, proposed by M. Mialeret, which may be of use to engravers in giving them an accurate image of their subject to work upon.†

The copper plate, being well cleaned and ready for engraving, is plunged into a solution of

Sulphate of Copper,	125 parts.
Sea Salt,	75 „
Water,	960 „

and allowed to remain for about a minute, it is then taken out of the bath, well washed and polished with a soft cloth. It is next exposed to light for about 5 or 10 minutes under a reversed negative, or even under a paper print on thin paper, care being taken that the design appears reversed on the plate. The plate is then removed from the printing-frame and plunged into a 20 per cent solution of hyposulphite of soda containing a little chloride of silver. After a few seconds the ground whitens, while the design becomes of a deep black. The plate is then taken out and well washed. The black deposit forming the shades may be removed or allowed to remain, in which case the plate should be varnished. It is said that these images may be etched by the use of menstrua which will attack the copper without affecting the silver, but I have not been successful in this application of the process.

XI. CONCLUDING REMARKS.

Having now described the different processes most capable of being utilised by the cartographer, it may be as well to briefly sum up the cases in which they are applicable, and to indicate the direction in which improvements should be looked for.

* 'Report on the Cartographic Applications of Photography,' p. 58.

† 'Photographic News,' Vol. X, p. 190.

The applications of photography to copying purposes may be divided into two principal classes, according as the original subjects have or have not been specially prepared for photographic reproduction.

As regards subjects in the first class, it is possible to adapt and prepare the original drawings, so as to fit them for the requirements of any photographic process considered most suitable to meet the object in view. As a rule such drawings will be intended for publication or reproduction in large numbers by the photo-mechanical processes rather than by silver or pigment-printing, which will do very well for small numbers.

For the reproduction of maps and plans a process is required which will admit of large-sized sheets being produced. Many processes capable of yielding very beautiful results when employed for subjects of small size are quite unsuited for larger work.

For map-work in line, photozincography will generally be found most suitable and convenient on account of the simplicity of the operations, the facilities it gives for joining several small sections into large sheets, and the short time required for turning out a large number of copies. Under favourable conditions, photozincography will give very excellent results for all practical purposes. If anything finer is required for permanent or standard purposes, then one of the engraving processes would be most suitable, and in certain cases the photocollotype could also be applied with advantage. For diagrams and small maps &c., to be printed with type, photo-typography will prove useful.

For shaded or coloured maps and drawings, photozincography and photo-typography are not applicable, and recourse must be had either to photocollotype or to one of the engraving methods with bichromate and gelatine which will give gradation of shade, such as Rousselon's, Woodbury's or Geymet's. It is probable that these latter processes will prove of great use as soon as their requirements and capabilities are better known.

It may be as well to repeat that whenever it is possible, drawings specially prepared for reproduction by photography should be drawn on a larger scale than they are ultimately required.

With regard to subjects in the second class, it is evident that the choice of a photographic process must depend very much on the nature of the original subject and its suitability for photographic reproduction by any particular method, as well as on the number of copies required.

It would be impossible to notice here all the cases coming within this class, it will therefore perhaps be sufficient to state that in most instances when only a few copies are required and permanency is not an object, ordinary silver printing will be found most convenient for all classes of subjects; and where the original is sufficiently translucent and photographic cameras not available, both negative and copy may be obtained in this manner sufficiently good for many practical purposes.

If the greatest simplicity in the printing operations is an object, the cyanotype or other iron processes may be used. If the prints are required to be permanent, the simple pigment process or the autotype may be employed, according as the original is in line or shaded.

If a large number of copies are required, then it will be more advisable to employ one of the photo-mechanical processes. The choice will depend much upon the nature and importance of the subject. As a general rule, in cases where the original is a lithograph, engraving or wood-cut, the best effect will be produced by employing an analogous photographic process.

Photolithography or photozincography is generally applicable to all subjects in dot or line, which can be printed in the lithographic press, except very fine delicate engravings or drawings; but if a block is required for printing with type it must be produced by one of the photo-typographic processes. The photo-collotype processes are of more general application and may be used for every kind of subject whether in line or half-tone. Their use is, however, restricted to subjects within the limits of a single negative, and they do not present the same facilities for carrying out alterations and corrections as the lithographic and engraving methods do, and thus their value for reproducing maps &c. on which corrections may be required is very much diminished. The fact of the printing surface being composed of an unstable organic substance like gelatine gives these processes an element of uncertainty which is a great drawback to their extended use on the large scale, especially in hot climates, and a really satisfactory and simple photo-mechanical process capable of reproducing any kind of subject without limit of size within ordinary dimensions is still a desideratum. The photo-engraving methods are the most suitable for high-class work which is likely to repay the cost of the skilled hand-labour required to finish and prepare the plates for the press. A simple method of photo-engraving of general applicability would be most valuable, and it is hoped that such a process will before long be available.

Use of Photography in War.—For the reduction and enlarging of military and topographical sketches, and for multiplying copies of maps and sketches required for use during a campaign, photography can render great services. The principal supply of such maps should, of course, be provided by a permanent office, established in a capital town and well provided with the proper appliances. The extent to which photography can be used in the field will depend on the character of the theatre of operations, available water-supply and means of transport, as well as other military considerations. In an open country with tolerably good roads, a complete photographic equipment might be carried in wagons specially fitted up for the purpose, and arrangements made for copying, enlarging or reducing sketches, maps or plans, and printing them by photozincography or

on a paper specially prepared for photocolotype printing, which would only have to be sensitised when required and, after exposure under the negative, could be fastened down on to a metal plate and printed in an ordinary printing press. In this way also views or other subjects unfit for photozincography might be printed if required in larger numbers than could conveniently be accomplished by silver-printing.

In connexion with such a method of printing by photocolotype, it would be very convenient to arrange for drawings being made on a tissue consisting of a transparent basis, such as waxed paper or sheet gelatine, covered with a thin opaque film which could be easily cut through with an etching-point. Such drawings would form very perfect reversed negatives.

Apparatus and appliances for taking views by the dry and wet processes and for taking prints of them in the ordinary way should also form part of the equipment.

A military photographic travelling field equipment of this kind has been organised in the English service and attached to the Field Train of the Royal Engineers. A description of it was given by Capt. Abney in a paper read before the British Association in 1874.*

In the case of operations in a wild or hilly country, the photographic equipment must be limited to the most indispensable requirements, and be regulated by the nature of the transport available and by other local and military considerations. It is very doubtful whether photozincography could be advantageously carried out in such localities, and the photographic outfit might be limited to some moderate-sized sets of apparatus for views and copying, with a large stock of dry plates and the necessary appliances for silver-printing. Some of the simple iron processes of printing might perhaps be usefully employed. Recent improvements in the preparation of dry plates by what are called the emulsion processes have greatly facilitated and simplified the practice of photography in the field, so far as taking the negatives is concerned, and a sensitive tissue has been prepared by Mr. Warnerke for this purpose, by which the use of glass plates may be dispensed with.

The apparatus, &c., should be strongly packed in moderate-sized parcels so as to be carried either by men or pack-animals.

At the same time it should be stated that it seems very doubtful whether photography can really be employed with much advantage *in the field* under the conditions of modern warfare in civilised countries. Its main use in any case will be the copying of reconnaissances and sketches of positions preparatory to a battle and of sketches and views of positions on the battle-field after the event. The delicate operations required either for taking negatives or for printing copies from them cannot satisfactorily

* '*British Journal of Photography*,' Vol. XXI, p. 415.

be carried out on the move; and therefore the photographic establishment must be more or less stationary, and this may prevent its employment in many cases where it might perhaps be of use. In the Abyssinian Campaign, a staff of photographers from the School of Military Engineering, Chatham, accompanied the force and did good service, under great difficulties, in copying route maps and sketches, and in taking pictures of objects and points of interest. In the Franco-German Campaign in 1870-71, the Germans organised a photographic brigade to accompany the Head Quarters of the army. It was found, however, that the photographers encumbered with apparatus, &c. could not keep up with the movements of the Head Quarters and, indeed, the want of them does not seem to have been very much felt.*

If facilities exist for the transport and working of a small lithographic press, it will be found more convenient to have original sketches drawn with transfer ink for immediate transfer to zinc than to reproduce them by photography, and for this purpose an excellent ink has been devised by Capt. Abney, which may be used on any kind of paper without preliminary preparation. It will also be found a great advantage to print copies of maps on ordinary calico, because it can be folded and packed away much more easily than paper and does not so readily get worn by use. This plan has been adopted in the Surveyor General's Office with success in preparing maps for the Camps of Exercise in this country.

Another use photographic reproduction can be put to in time of war is the preparation of miniature despatches to be sent by pigeon-post. Such despatches were largely used in the Franco-German Campaign for communicating with the beleaguered garrison and residents in Paris. This is a service that photography alone can render and it is likely to be largely utilised in any future European war in similar cases.

* See Capt. Hannot's '*La Photographie dans les Armées*'.

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VII.—*Notes on some Reptilia from the Himalayas and Burma.*—By
W. T. BLANFORD, F. R. S., &c.

(Read 5th June.)

The species described in the following pages are chiefly from a very interesting collection made by Mr. W. Davison in the Tenasserim provinces. One snake is from another collection made in Sikkim by Mr. Gammie.

DRACO MAJOR, sp. nov.

D. peraffinis D. dussumieri, naribus superne versatis, pede posteriore axillam haud attingente; tympano nudo; tuberculo parvo utrinque superne post supercilium oriente, cristâ nuchali nullâ; sed multo major, appendiculâ gulari longâ squamis majoribus indutâ, nonnullis squamis majusculis distantibus in lined unicâ interruptâ laterali ad insertionem alæ collocatis, nec aggregatis; alis aliter coloratis, fusco-transfasciatis, vel omnino pariter marmoratis nec versus margines saturatioribus.

Hab. in provinciâ Tenasserim, haud procul ab urbe Tavoy atque ad radices montis Nawiabu dicti.

Description. The hind limb falls a little short of the axil, when laid forwards. Nostrils directed upwards, tympanum naked. Upper labials large, some of them exceeding the nasal shield in length. A small tubercle above at the hinder extremity of the orbit. No crest of enlarged scales. Dorsal scales sub-equal in size, not keeled, a few much larger scales, usually at a considerable distance apart, in a single interrupted row along each side

of the back at the insertion of the wing. Gular appendage covered with large scales, each fully twice as long and broad as the scales of the abdomen. Abdominal scales keeled. A fringe of large pointed triangular scales, many of them nearly equal to the tympanum in breadth, along the hinder part of the thigh and each side of the basal portion of the tail. Tail triangular near the base, with a row of slightly enlarged and sharply keeled scales along its upper edge. Scales below the tail, near the base, but not just behind the anus, larger than those at the sides.

The colouration above in spirit is nearly uniform, the wings are marked with very distinct dusky cross bands, broken up by light spots in the only female collected, but these markings are less distinct or wanting in the males, in which the wings are mottled with pale irregular spots. In some the wings are rather darker near the margins, but this is not so distinct as in *D. dussumieri*, and there is never the dark fringe with narrow sub-parallel pale transverse lines of that species. Throat unspotted, greenish yellow in spirit, pale scarlet beneath the lateral appendages.

This is probably the largest species of the genus known. The largest specimen, a male, measures 14 inches in extreme length, of which the head and body from nose to anus measure 4·75. Two other males have the body of the same length, the tail being about an inch shorter. A female is less in all its dimensions, nose to anus 3·5, tail 5·75. The sex has been ascertained by dissection. In the female the gular appendage is very short. From the condition of the ovary the specimen is probably adult. All the examples captured were obtained in the forest east of Tavoy, two being from the foot of Nawlabú hill, a high ridge some eight miles east from Tavoy town.

The nearest described species are *D. quinquefasciatus* of Penang and *D. dussumieri* of Malabar, and strange to say the latter, although so widely removed in locality, is the more closely allied of the two in structure. The present form is distinguished from both by its much larger size and from *D. quinquefasciatus* by its naked tympanum and longer hind limbs. From *D. dussumieri*, *D. major* is known by having much larger supra-labials, each plate near the middle of the lip on each side exceeding the nasal in length, by the enlarged scales at the sides being single and not aggregated into groups, by the much larger scales on the gular sac, and by the colouration of the wings.

Besides the new form, *D. maculatus* and a species which is probably *D. teniopterus* were obtained in the same forest. The typical specimen of the last named species, a male from Chartaboum, was said by Dr. Gunther,* who described it, to have a very low nuchal crest and no tubercle above the orbit. Now in two males of the Tenasserim dragon, there is a

* Rept. Brit. Ind., p. 126.

small tubercle above the orbit and there is no nuchal crest, but as in one specimen there is a longitudinal row of scales very slightly larger than the others along the back of the neck, and as the supra-orbital tubercle is small, these characters may be variable, and I hesitate to separate the species upon such slight data without actual comparison. Still it is not quite certain that the Tenasserim lizard is the true *D. taniopterus*.

BRONCHOCELA BURMANA, sp. nov.

B. omnino viridis, affinis B. cristatellæ, B. molluccanæque, sed squamis lateralibus minoribus, in series longitudinales ad 25 dispositis, serie dorsali parum majore, cristâ nuchali parvula, scutis majoribus post supercilium nullis.

Hab. ad Tavoy in Tenasserim.

Description. Scales of the sides of moderate size, smaller than in *B. cristatella*, larger than in *B. jubata*, in about 23 to 25 longitudinal rows, fewer behind, scales of the abdomen much larger, in about 12 rows, all sharply keeled. Dorsal row of scales distinctly larger than those of the sides, nuchal crest very low, formed of a series of triangular flat spines, passing between the shoulders into the dorsal row of scales. No fold before the shoulder. There are no enlarged scales behind the superciliary ridge, all the scales between the eye and tympanum are nearly similar, those in the middle are a little larger than the others, but there is no distinctly enlarged scale. The hind limb, laid forwards, does not quite extend to the end of the snout, the fore limb extends to the thigh, the fourth hind toe is one-fifth longer than the third. Colour grass green throughout, paler below, no dark patches nor yellow bands on the body. On the top of the head, the supra-orbital regions are surrounded by slightly enlarged scales of a dusky purplish colour, but this may be individual or due to change of tint in spirit.

This species is at once distinguished from *B. cristatella* (and from *B. molluccana* if that be really different)* by its larger lateral scales, by its much lower nuchal crest and by the absence of any enlarged scales behind the supercilium. From *B. jubata*, on the other hand, the present form may be known by the lateral scales being larger, as well as by the want of enlarged scales behind the supercilium. There is no specimen of *B. smaragdina*† in Calcutta for comparison, but that species has evidently much larger lateral scales, no true nuchal crest, longer limbs, different colouration, and very much larger scales on the throat, for there are said to be only 16 series between the angles of the mouth, whereas in *B. burmana* there are double that number.

* Stoliczka, J. A. S. B., XXXIX, Pt. II, p. 179.

† Günther, Rept. Brit. Ind., p. 138.

The only specimen of *Bronchocela* collected by Mr. Davison was procured near Tavoy. The size is about the same as that of other species; from nose to anus 3·7 inches, tail about 12 inches when perfect.

LIOLEPIS GUTTATUS.

Mr. Davison's description of the habits of this lizard, of which he has procured several specimens, supplements Mr. Theobald's.* All the specimens procured were found in perfectly open places devoid of vegetation, a favourite position being in the hard threshing floors made in the middle of dry rice-fields. Here *Liolepis* makes its burrow and is seldom found far away from the mouth of its hole. This appears to confirm Mr. Theobald's opinion that *Liolepis* never ascends trees, as Cantor supposed.

Mr. Theobald classed together *Uromastix*, *Liolepis* and *Phrynocephalus*, in a distinct family, which he called *Uromasticidae*. The distinction of the family has been accepted by other naturalists, and so far as the genus *Uromastix* is concerned, has some important structural peculiarities in its favour, but I have already given my reasons† for dissenting from Mr. Theobald's views as to the alliance between *Uromastix* and *Phrynocephalus*, and I now feel some doubt as to whether there is any close connexion between *Liolepis* and *Uromastix*, despite the circumstance that both burrow, and that there is some slight similarity in their habits. *Liolepis* wants the peculiar dentition of *Uromastix* and is no more exclusively herbivorous than *Stellio*. I have examined the stomachs of three specimens of *Liolepis*: in one I found nothing except insects, (chiefly crickets and termites,) whilst in the other two there was a mixture of insects and vegetable substances, fragments of small fruits and apparently of leaves. The intestinal tract is much shorter than in *Uromastix*; in a specimen of *L. guttatus* 16½ inches long, the whole length of the stomach and intestine (preserved in spirit) is 16 inches. In *Uromastix* the length of the intestine is much greater than that of the body and tail; in a fresh specimen of *U. hardwickei*, measuring 12½ inches, the intestinal tract was 27 inches long. In a large example of the Mesopotamian *U. microlepis*, preserved in spirit and 17 inches in length, the intestinal tract was also 27 inches long. Moreover, in *Uromastix* the form of the cœcum is different, and much more complicated than in *Liolepis*, in which there is simply an expansion of the intestine.

ULUPE,‡ gen. nov. *Lycodontidarum*.

Corpus gracile, compressum. Caput breve, depressum, collo paullo latius. Oculi pupilla elliptica, verticalis. Scutum loreale cum præoculari

* Jour. Lin. Soc. X, p. 34. Descriptive Catalogue, Rept. Brit. Ind., p. 119.

† Eastern Persia, II, p. 334, note.

‡ Etym. Ulúpi, a princess of the Nágas or serpents, mentioned in the Mahá Bhárata.

junctum; nasale haud bipartitum. Squamæ corporis in tredecim seriebus longitudinalibus, læves, ventrales ad latera angulatæ, subcaudales biserialim ordinatæ.

ULUPE DAVISONI, sp. nov.

U. scutis præfrontalibus cum postfrontalibus longitudine fere æqualibus, verticali mediocri, occipitalibus duplo majoribus; loreali longo ad oculum attingente; præoculari alio nullo, postoculari unico; supralabialibus 7, tertio quartoque infraorbitalibus; ventralibus 265, anali integro; subcaudalibus 108; superne nigra, albo-transfasciata, annulis antice latioribus atque magis distantibus, subtus albida.

Hab. in provinciâ Tenasserim Burmanicæ, haud procul ab urbe Tavoy.

Description. Body, slender, compressed. Head a little broader than the neck, short, depressed. Pupil elliptical, vertical. Shields of head regular, nostril in a single shield; loreal and præocular united. Scales of body smooth, in 13 rows. Ventrals 265, strongly angulate at the sides, anal undivided, subcaudals in 108 pairs. Maxillary teeth few in number, a space behind the anterior tooth, followed by three or four teeth close together, the two anterior rather the longest; mandibular teeth small.

Head shields.—Rostral much broader than high, scarcely extending to the upper surface of the head. Anterior frontals as long and nearly as broad as the posterior, the anterior edges of the former meeting at a slight angle directed backwards, and each anterior edge being about equal to the suture between the two shields. Vertical of moderate size, about half of an occipital, the sides convex, curving gently towards each other at first, more rapidly behind. Occipitals rounded behind. Nostril small, rather nearer to the anterior than to the posterior extremity of the nasal shield, which is much longer than high, and has only one shield, of about the same shape, and apparently consisting of the loreal and præocular united, between it and the eye. No other præocular is present; one postocular; the superciliary descends on the side of the head before and behind the eye. Upper labials 7, the 3rd and 4th forming the lower edge of the orbit; temporals 1 + 2.

Colour in spirit, above black with white cross-bands, each about a third of the width of the intervening dark space, becoming broader on the sides; lower parts white; so the colour may be described as white with large black spots above. The white rings and black interspaces are broadest near the head and become much narrower behind, and still narrower on the tail, but the proportion of the two colours remains the same. On the single specimen collected there are 36 white rings on the body, 26 on the tail, the last being terminal. The white sides and lower parts, on the hinder part of the body and the tail, are spotted and mottled with dusky. Head,

blackish above, but with a white band on each side from the white sides of the neck passing over each occipital to the superciliary shield, the two bands being only separated by a narrow dusky space behind the vertical. Lower portion of upper labials white.

A single specimen of this interesting snake was obtained by Mr. Davison at the foot of Nawlabú Hill, east of Tavoy, in evergreen forest, at an elevation of about 1,500 feet above the sea. This specimen measures 28 inches, of which the tail is 6.

It appears to me that this snake must be considered the type of a new genus of *Lygodonts*, distinguished from all other Indian forms by the small number of scales round the body. The single nasal shield, the union of the præocular and loreal, and the strongly angulated ventral shields are also a peculiar combination of characters, although all are found in some other genera of the same family.

OPHITES GAMMIEI, sp. nov.

O. squamis corporis in 19 series longitudinales ordinatis, dorsalibus carinatis, lateralibus lævibus; scutis præfrontalibus pariter longis atque latis, postfrontalibus tripliciter majoribus; verticali viz longiore quam lato, lateribus convexis; loreali parvo, longiore quam alto; præoculari unico, postocularibus duobus; supralabialibus 8, tertio, quarto, quintoque infraorbitalibus; ventralibus 214, anali integro, subcaudalibus 101. Color fuscus, annulis antice albidis, postice griseis, marginibus irregularibus, variegatus.

Hab. in Sikkim.

Description. Scales of the body in 19 rows, the 9 dorsal rows keeled, 5 rows at each side smooth. Body slender, compressed, head rather broader, flat. Eye small, pupil apparently vertical. Ventrals 214, bluntly angulate at the sides, anal entire, subcaudals 101 pairs.

Head shields.—Rostral about as broad as high. Nostril large, between two nasals, but scarcely separate from the anterior frontal. Anterior frontals small, each about one-third of a postfrontal and about as broad as long; postfrontals much broader in the middle than they are in front or behind, their anterior and posterior outer corners being hollowed out to receive the nasal and præocular shields, between which each postfrontal is bent over the side of the head above the small loreal. Vertical very little longer than broad, with convex sides. Each occipital is about twice as large as the vertical, rather attenuate behind, with the posterior termination rounded. Upper labials 8, the 3rd, 4th and 5th entering the orbit. Loreal small, longer than high. One præocular, just reaching the upper surface of the head; 2 postoculars. Temporals irregular. Two elongate chin shields of about equal length, the anterior in contact with 5 lower labials.

Colour in spirit, evidently somewhat faded. The body is surrounded by alternating dusky and light rings with very irregular crooked margins. Head above dusky olivaceous with pale spots in the middle of most of the shields; upper labials and anterior lower labials pale with dusky margins. An imperfect pale collar behind the head: all the lower part of the head and neck whitish. There are 30 pale rings on the body, the first pale ring imperfect above, and the dark patch in front not continuous across the throat, the rest of the rings encircle the animal. Farther back the pale rings become grey with pale margins and light spots occur in the dark rings. On the belly, throughout the anterior part of the body, the dark rings are only about half as broad as the white, above the difference is less, and near the head the dark rings are much broader above than the white. There are 16 rings on the tail.

This snake is distinguished from all other species of *Ophites* by having 19 instead of 17 rows of scales round the body. It approaches nearest to *O. septentrionalis**, the precise habitat of which is unknown, but is probably the Himalayas or Assam, the type specimen having been collected by Dr. Jerdon soon before his departure from India, and found unlabelled amongst his collections after his death. From *O. septentrionalis* the present species appears to be distinguished by more numerous scales, by its differently shaped anterior frontals, and by the dark rings extending across the belly.

A single specimen was procured by Mr. Gammie at the Cinchona plantation in South-eastern Sikkim. This specimen measures $31\frac{1}{2}$ inches, of which the tail is 7. It is rather surprising to find a new snake in so well explored a locality.

VIII.—*Notes on the Earthquake in the Punjab of March 2nd, 1878.*—

By A. B. WYNNE, F. G. S.

(Read 5th June.)

Earthquakes in the Punjab are not uncommon, but little effort seems to have been made to record their occurrence in any way that might prove useful; indeed as a rule they are neither sufficiently frequent nor pronounced to leave more than a passing impression, though the directions from which the undulations come are occasionally noticeable, and doubtless, with proper appliances, they would form an interesting study.

On the 2nd of last March the most severe shock which has occurred within the memory of the present generation, so far as I can learn, affected the whole of the northern part of the province. With regard to it I have collected a few notes which I offer more as a record of the event than as

* Günther, P. Z. S., 1875, p. 233.

an exhaustive or abstrusely scientific treatment of the subject. Accurate details concerning so large an area are not within the reach of every one to collect, and I have had a little difficulty in learning even so much as I have put together. Some of this information has been derived from personal observation, some from the accounts given by friends or acquaintances, and some from the reports in the "Pioneer" newspaper, and "Civil and Military Gazette."

It may be as well to give the localities from which information has been received in the form of a list, with the hour of the shock, where known, reduced to Madras time,* and the duration of the earth-movement, opposite.

Punjab Earthquake of March 2nd, 1878.

Locality.	Hour felt, (Madras time).†	Duration.	Sound wave.	Authority.
Bannu,	Uncertain,	Uncertain..	None ..	R. Udny, Esq., Deputy Commissioner.
{ Kohát, ..	About noon,....	About 2 minutes.	No information.	Major Swinton Browne, 6th P. I.
{ Kohát, ..	Noon, Madras (11·37 Station.)	Uncertain..	Rumbling sound.	Major Ross, 1st Sikhs per Capt. Plowden, C. S.
Pesháwar, ..	About noon,....	Over a minute.	Noticed ..	Capt. M. S. Wynne, 81st Regiment.
Naoshera, ..	No details, ....	....	....	Reported.
Hoti Mardán,	No details, ....	....	....	Major Stewart—Guides.
Attock,	About noon,....	Over a minute.	Unnoticed..	Capt. C. F. Massey, C. S.
Abbottabad,	Noon,	1 minute, 50 seconds.	Unnoticed..	Personal.
Ráwalpindi,	Immediately after noon.	Over a minute.	No sound ..	Dr. Henderson, Col. Surgeon.
.....	.....	.....	Sound noticed	Mr. P.—
Jhelum,	Noon,	Uncertain..	No sound ..	Buchanan Scott, Esq., R. E.
Murree,	Noon,	$\frac{1}{2}$ a minute to 3 minutes.	Unrecorded	Rev. Mr. Corbyn, Mr. W. L. Holman.
Lahore,	11·56 A. M.,	3 minutes..	....	"Civil and Military Gazette" Mar. 4th, 1878.
Lahore,	About noon? ..	Unrecorded	....	"Pioneer" Mar. 6th, "
Lahore,	12·50 P. M.?	Unrecorded	....	R. Dick, Esq.
Ferozpúr, ..	Unrecorded,....	5 minutes ..	Noticed, loud	Ditto.
Simla,	12 h. 1 m.?	9 minutes ..	Unrecorded	Ditto.
Masurí,	Unrecorded,....	No information.	No information.	"Pioneer" Mar. 1878.

* Where the time of the place is unknown to be that of Madras, or the reduction thus rendered doubtful, a note of interrogation is inserted.

† Madras time according to Frontier authorities is 23 minutes faster than the local time kept, by which Station guns are fired.

A few days before the greater shock, I felt an earthquake at Abbottabad, on February 26th, at 3.40 P. M. It was of the kind usual in these parts, lasted only a few seconds and did no damage. A sharp shock was reported in the "Pioneer" to have occurred at Kángra on the 19th of March (after the greater one), and others occurred in Hazára—on March 29th at 7 P. M.; on April 4th at 6.11 A. M., (a short and sharp one); on April 19th at 5.9 A. M., a more considerable one; on April 21st at 9.20* A. M., lasting about five seconds. That of April 19th was, though short, rather severe yet insufficient to bring down tall chimneys at Abbottabad badly shaken and bulged by the earthquake of March 2nd. The shock of the 21st caused the roof beams of the dāk bungalow at Haripur to creak, while on the night of the same day there was a slight shock after midnight at Ráwalpindi.

In all the cases just mentioned except the Kángra one, of which I have no information in point, and that of April 4th, the undulation was more or less clearly felt to be from west to east, as seems to be the case most frequently in the N. W. Punjab, but on April 4th, it appeared to come from north to south. In none, so far as I am aware, was any sound-wave heard, indeed I have only once heard this: some years ago at Murree, when an east and west shock occurred (at about 10 o'clock P. M.) in the silence of the night. I find, however, that a noise was heard in some cases accompanying the shock of March 2nd, 1878, though entirely unnoticed in others, and positively absent at Ráwalpindi, according to a careful observer.

The detailed information, such as it is, which I have been able to collect with regard to this severely-felt earthquake is as follows:—

Earthquake of March 2nd, 1878.

Bannú. The shock was felt here severely and lasted unusually long. This is all the information I can gather.

Kohát. Captain Plowden, Deputy Commissioner of Kohát, replying to a letter, informs me that the shock occurred there at 39 minutes past 11 o'clock A. M., station time, or noon? by Madras. The motion came from the west with a rumbling sound like that of the underground railway-trains, followed by a roll and three sharp shocks: no shocks were observed before or after this earthquake and its duration was not accurately determined.

Major Ross, 1st Sikhs, who gave this information, was bathing at the time, and says the water was driven out of his tub to the height of eight inches or so, and the bath-room seemed to heave like the cabin of a ship at sea.

* All local, not Madras time, for which add 23 minutes.

Several houses and public buildings in the district were cracked and otherwise damaged.

I am informed by another Officer (Major Browne) who was then in Kohát that he felt the shock at about the same time given above, it lasted some two minutes, shook the whole place very violently, so that people left their houses, and it seemed to come from the westward.

A considerable portion of one of the walls of the strongly built Fort of Kohát was thrown down. No accompanying sound was noticed by my friend, and the whole character of the disturbance seems to have resembled that of other places.

Pesháwar. My informant felt the shock here as he was "marching out" with his regiment towards Jamrúd. It occurred at noon nearly, Madras time, (or after 11:30 station time) and he was then about three miles from Pesháwar on the Jamrúd road. A halt having been made, some of the men who were sitting down jumped up, startled by the motion. He noticed that a low rumbling sound immediately preceded the shock: the earth was plainly seen to undulate, and a water-cut beside the road, after the shock had passed, showed a lately wetted margin of two feet or more, consequent upon the transit of a longitudinal wave caused by the undulations. The motion came from the westward in the direction of Jamrúd. Some of the people present felt nausea.

On his return to the station he found the front of his bungalow thrown down. A wall of the fort also fell, and several other houses were damaged. The Barracks escaped, owing to their having been built with iron couplings in the walls, and in the city, from the use of wooden tie-beams in the masonry, because of the damage often done here by slighter earthquakes, the injury done was less than in the Station.

Naoshera. Reports say the shock was severely felt here.

Hoti Mardán. I can only learn that the earthquake-wave here set things which were suspended swinging in an east and west direction.

Attock. At Attock the earthquake occurred late in the forenoon (station time) about noon by Madras. A wall of the Serai or fort was thrown down, and the motion of the earth was strongly felt even by people on foot, by whom a strong shock may often pass unnoticed.

Abbottabad. Here the movement commenced within a minute or so before or after 12, noon, (Madras time) as nearly as I could estimate from the time usually kept at the station. I was lying sick in bed but happened to have my watch in view; there was a palpable undulation crossing my bed from westward to east. At first it commenced with a slight tremor of the usual kind and after a short pause of perhaps 3 seconds, this returned with greatly increased strength. The wall of the room cracked from the crown of the arch over the door to the roof, which being of wooden shingles

creaked and strained so loudly, that I may have been unable to notice any sound-wave. I got up but could only move slowly, and after some delay in securing my watch by which I was noting the time, I reached the outside of the house, and heard the crash of chimneys falling at the neighbouring bungalows, while the stones of the one belonging to the dāk bungalow I had been in, were all shaken asunder, though the chimney (a low one) did not fall. A cup half filled with milk in my room had its contents violently thrown out, and projected nearly to the distance of a foot on each side towards the east and west.

During the shock the vibration was so continuous or so quickly repeated as to seem without intermission after the first one I have mentioned, and the motion died away more gradually than it commenced. I timed its duration as 1 minute and 50 seconds from first to last.

Doctor Grant, then acting Medical Officer of the station, who had left me shortly before, was walking up an inclined open space when the shock occurred; he observed the ground to undulate and the trees to sway about considerably, though there was no wind, he felt a sensation of nausea and found it difficult to walk. Next he saw a man thrown from a ladder and then a cloud of dust rising from the falling wall of a bungalow. On reaching his own he found the wall cracked, also above an arch.

Some time afterwards I was staying at another two-storied house in this station which had suffered very much. Some of the walls were cracked from near the ground to the roof; the cracks passing through weak places, such as openings for windows or doors. I noticed that it was in most cases those walls which ran east and west that were cracked; as if a short wave to which they could not conform had passed longitudinally beneath them.

No one in the place remembered an earthquake of such severity to have occurred before.

Rāwalpindi. At this station the earthquake occurred immediately after gun-fire (12, noon, Madras time), possibly a little later than at Abbottabad, but the time kept there is scarcely to be relied upon to a minute. The movement appeared to come from a direction north of west, to judge from the observations of Dr. Henderson, and from the directions in which he found water to have been thrown out of vessels. It lasted for over a minute. Dr. Henderson is certain there was no sound-wave, but another person stated that a low rumbling sound did precede the shock.

Dr. Henderson felt the heaving of the earth very distinctly; his little boy fell down and asked what was the matter with the ground.

Dr. C—— of the 10th Hussars was talking to the Mess Sergeant in the compound of the Mess, he did not recognise the occurrence as an earthquake, but felt sick and walked to a tree for support. On returning a minute or two afterwards, the Sergeant said he too had felt sick, and asked for medicine.

Some of the houses in the station were rent and shaken, and a forge at one of the workshops was thrown down, but the damage done seems to have been less than elsewhere. The place is situated on an open plain and stands upon a considerable depth of sandy and coherent brick clay, overlying highly inclined sandstones and clays, often vertically bedded.

Jhelum. The shock was felt at Jhelum at noon, Madras time. It appeared to come from N. E. and to pass to S. W., and it was unaccompanied by any rumbling sound. It damaged the steeple of the Church near the top, cracking it across and shifting the upper part both by lifting it to one side and turning it horizontally on the base of the broken part, as far as can be seen from below.

The Officer who communicated this thought he must have got a sun-stroke; he was out of doors when the shock occurred and the ground moved, and he noticed an interval after the first, between it and the (?) stronger shock which followed, much in the same way as occurred at Abbottabad.

Murree. In a letter from Murree it was mentioned that the shock was severely felt, and house-property sustained considerable damage: no further details have reached me.

By another letter (from Mr. Holman) I learn that the time the shock occurred was 12 o'clock, noon: its direction so far as he could remember was from south to north.* (From another observer I learn that the direction appeared to be from west or west by south.) Its duration he supposes was about half a minute, though most people said three minutes. (N. B. The average of these would give one minute and three quarters, very nearly the time observed of Abbottabad.)

There were three distinct shocks, the last the most severe, and he only remembers one as bad during a long-continued residence of many years in Murree.

Some damage was done to the station, walls fell, and several chimneys also. One observer heard two distinct loud sounds like volley-firing, which he attributed to the working of the shingle roofs.

Lahore. My information concerning the earthquake at Lahore comes partly from the "Pioneer"—or the local press (Civil and Military Gazette), partly from a friend who was kind enough to make enquiry for me.

From the report in the "Pioneer" of March 6th, 1878, though the shock is said to have been severe, the writer did not himself notice the occurrence at all, but was told of it afterwards, and gives the time as *noon*, presumably Madras time.

In the local paper of March 4th, the time of the shock is given as 4 minutes to 12 o'clock noon. "A continuous vibration of the ground lasted

* The ridge on which Murree stands at an elevation of over 7000 feet runs nearly N. E.—S. W.

for 3 minutes," and the earth "wave appeared to travel from east to west."

One of the gentlemen who wrote to my friend, says, he was sleeping at the time, and being suddenly awakened by the earthquake, he ran into his bathroom to observe the tub. In this, the water was oscillating and had wetted its sides 5 inches vertically above the level shown when at rest. Hanging plants and a bird cage in the verandah set in motion by the earth-wave swung to the north and south, a direction corresponding to that marked by the water in the tub.

As to duration the same observer thinks the time given in the local paper excessive, and that it could not have been many seconds, perhaps 30. He does not state that any sound-wave was heard.

A wall in his house was cracked and the filling of an archway showed a complete separation all round the arch. In the city many old houses fell and one in falling was reported to have killed three men.

Mr. Scott, R. E. of Jhelum, heard from Lahore that two friends playing at billiards in the latter station observed a N. E.—S. W. oscillation in the lamp-frame above the table, on the occurrence of the shock, which took place at noon, the same time as in Jhelum.

Ferozpur. Although at Lahore the earthquake passed unnoticed by at least one person, in a station so near as Ferozpur, according to a correspondent of the "Pioneer," something like a panic occurred. He writes—"The first shock was quite violent enough to cause a very sensible movement on the earth's surface, and the dull rumbling noise was so unusually loud as to attract general attention. Half a minute after came the second shock, a very rude one indeed, making floors upheave, walls oscillate, and beams and rafters start and crack. Every one rushed into the open air only to find the ground shivering under their feet. The third shock was gentler, the tremor of the earth, however, continued for a long time, and it was fully five minutes if not more from the beginning of the first shock till the last trembling passed away. No buildings fell, but many beams were started, and some walls were cracked."

The time of the first shock is not given.

Simla. If Madras time is kept at this station, as seems probable, the shock was felt there at the same general time as elsewhere, *i. e.*, one minute past 12, noon. See "Pioneer" March 6th, 1878. The reports in this paper say, the earthquake shook Simla to its foundations, and was one of the longest continued ever known there. "The wave or movement came first from east by south and lasted for about a minute, when it shifted to north-east, and increased in intensity from a tremor to a roll, the shocks occurring without intermission for nine full minutes, the last being at ten minutes past noon. It was the third shock within six months, each being severe."

The coincidence apparent as to time would seem to identify the shocks

here as part of the same earthquake felt in the other places mentioned, but the directions and duration are so very different as to suggest that the undulation, if generated near a line reaching from the Simla portion of the Himalaya, towards and beyond Pesháwar, met with some resistance or disturbing force by which it was deflected or even reflected, and its effects rendered cumulative, so that the shock was felt for a greatly longer period.

Masúrí. An earthquake shock at Masúrí is so mentioned in the "Pioneer" as to render it presumably that of March 2nd, and as a result it is stated that springs had ceased to flow.

The following table of the directions from which the shock was felt to come at different places may be useful.

Kohát,	}	From the west.
Pesháwar,		
Hoti Mardán,		
Abbottabad,		
Murree,		From the south ?
Ráwalpindi,		From west by north.
Lahore,		Uncertain.
Simla,		From south of east and north-east.

It will be seen from these brief notes that the effects of the shock of March 2nd were more or less forcibly felt over the whole of the Upper Punjab and neighbouring regions. The space being so large, the most favourable conditions for observing earthquake phenomena—*i. e.*, constant homogeneity and elasticity of the rocks forming the earth's crust—could scarcely have been expected. Mountain regions being exceptionally unfavourable from the form of the ground and liability to variety of formations, fissures, planes of displacement &c., much disturbance of the earth-wave, and variation of effect might have been anticipated; and yet it would appear that the shock must have been almost simultaneously felt along the whole western outer Himalayas and their continuation, from Masúrí to Pesháwar, in a direct line some 455 miles apart.

Assuming 30 miles a minute to be a high rate for transmission of an earthquake wave (Mallet, Admiralty Manual of Scientific Enquiry) and that this shock originated near either Pesháwar or Masúrí the passage of the wave from one station to the other would have occupied about 15 minutes, and it should have been observed so much later at one of these places, which would perhaps be a large error to attribute to the time recorded. But if the shock started from a point near midway between and occupied half the time in reaching these points almost simultaneously, then a smaller error of time would be both possible and difficult to detect from the records at hand. There is, however, no information available regarding the earthquake from the vicinity of Kishtwár, which would be about half

way in the Himalayas, though at Lahore, nearly in the same relative situation, on the plains, the time given is "*about noon*" according to observations made, or the same as at either extremity of the region known to have been disturbed.

However these considerations might indicate a seismic centre among the mountains somewhere on the Simla side of Kashmir, the observed motion of the undulations both at Simla and towards Pesháwar are against the supposition of such an origin, even though a considerable amount of this motion be attributed to secondary vibrations masking the main earth wave.

If the disturbance had one common source, and if the *primary* undulation reached the earth's surface at almost the same time at all the widely distributed points indicated, it may perhaps be a legitimate deduction that the place from which it originated was very deep-seated, or else that the conditions of the earthquake were somewhat peculiar and the disturbances were initiated along an extended line rather than at any particular point.

It will be noticed that the greatest differences in the results, so far as the information collected extends, took place at Simla, Lahore, and Ferozpur; differences both in the duration and direction of the motion* which would render further information most desirable, and it will be observed, that this disparity coincides in a way with the marked general change in the alignment of the mountain ranges. All the stations close to the outer Himalaya in the upper Punjab, whence I have obtained any details, stand among or adjacent to ranges belonging to the east-west, or west-by-south system, prevailing on the Pesháwar side of the Jhelum valley, while Simla and Masúrí are upon or near ranges having the north-westerly bearing common to the main direction of the western Himalayan chains. On the supposition that the earth-wave travelled from the west as indicated by so many of the upper Punjab observations, it would have passed longitudinally amongst the western mountains and under the adjacent Ráwalpindi plateau towards the east as far as the Jhelum valley sinus, and, meeting the oblique ranges beyond, might have manifested itself in a different manner.

The varying geological structure of the whole region does not appear to have appreciably influenced the results of the earthquake's manifestation at different places. Pesháwar stands in an alluvial plain; Attock close to the edge of the Indus flats (at their junction with, but more correctly,) upon a mass of slates. Abbottabad is close to, if not actually traversed by, a long line of fault having a very large (unestimated) displacement and

* In the case of Murree my informant seems rather uncertain, as to the direction, but my Lahore information is positive as to this being N. and S. though from which is not stated.

cutting off limestone mountains from others formed of slate. Ráwalpindi is on a plateau formed of tertiary rocks, alternating sandstones and clays, just there nearly vertical and horizontally overlaid by post-tertiary and perhaps even newer clays, sands, and boulder-beds. Lahore and Ferozpur are on the alluvial Punjab plains.

In most of these places, the shock occurred at the same time, as nearly as can be judged, and its results were similar, whether it lasted under two or as much as five minutes.

Kohát, close to east and west ridges of limestone or of sandstone, and standing upon a stony detrital deposit at the mouth of the Hangú valley, is about 80 miles due west of Ráwalpindi: in both places the undulation approached from the westward, in the latter more nearly west-north-west.

Simla is entirely differently situated from these stations; at a great elevation and nearer to crystalline masses which would probably afford a better conducting medium for the earth-waves. Yet here the time of the occurrence was presumably the same as elsewhere, and though the movement is said to have come from opposite directions and to have lasted fully nine minutes, I have no evidence that the damage caused, which would be a measure of the force exerted, was at all greater than at Abbottabad or other localities.

I have heard it more than once observed that these Punjab earthquakes usually occur after rain has succeeded a spell of fine weather; indeed Dr. Henderson tells me that from this he predicted the occurrence of the earthquake previous to that of March 2nd, felt at Ráwalpindi as well as by myself in Hazára. With reference to this point it should be remembered that the nine distinct shocks which I have mentioned as having recently occurred in the Punjab within fifty-three days, have followed a season of excessive rainfall preceded by an exceptionally and disastrously dry summer.

Whether the access of meteoric water by gravitation through the rocks to hotter regions below be a sufficient cause in the present case for the phenomena observed, or a better one can be suggested, I must leave for the enlightened consideration of competent seismologists; and though several minor shocks are not unusual attendants upon a greater earthquake, I venture to suggest that something exceptional in the way of cause must have occurred to account for the greatly increased frequency of late of the earthquakes in the Punjab, where they have rarely taken place more than once in a twelvemonth, at least for the last nine years: and also for the greater than usual intensity which has marked one of them, almost simultaneously felt over an area, which may be roughly estimated at 67,000 square miles.

IX.—*Notes on the land and fresh-water shells of Kashmir, more particularly of the Jhilm valley below Srinagar and the hills North of Jamu.*—
By W. THEOBALD, *Geological Survey of India.*

(Received 27th June ;—Read 3rd July, 1878.)

The present notes embody the results of a hasty traverse of the ground from Mari to Srinagar and thence *via* the Mohu pass to Jamu, during the very unfavourable months of March and April last year, and it is to be hoped that the rather meagre list here given may be hereafter enlarged very considerably by others who may have more leisure, and a more favourable season for their investigations than I could command.

In the list of Kashmir mollusca appended to these notes, an asterisk marks those species not obtained by myself personally.

MELANIA TUBERCULATA, Müll.

A small race of this widely spread shell occurs in the outer hills.

VALVATA PISCINALIS, Müll.

Abundant on the river mud in pools under the Travellers' Bungalow at Soper.

BITHYNIA PULCHELLA, B.

Common in the valley.

HYALINA LUCIDA, Drap.

H. FULVA, Drap.

Both species occur on the Panjál range and are common in the debris of streams running into the valley.

MACROCHLAMYS INDICA, B.

M. vitrinoides, auctorum (*non vera*).

M. petrosa, Hutton.

This widely spread species is rather rare in the outer hills. A single mature shell only was met with, much smaller than the type, and measuring only $18 \times 15 \times 7$ mm. An immature shell was a trifle larger.

M. SPLENDENS, Hutton.

Colour bright chestnut, with a lustrous polish. My largest shell is not quite adult, and measures $15 \times 13 \times 8$ mm. A dead adult shell is a trifle smaller. It shows the mouth very oblique and shaped much as in *M. aspidēs*, with the lip thickened inside as in *Hemiplecta monticola*. This species occurs rather plentifully in places above Uri, nestling under stones.

M. PATANE, B.

A few dead specimens of what seems a small race of this species were obtained above Uri, one specimen measured $9 \times 7.7 \times 5$ mm.

MACROCHLAMYS, sp.

A single dead shell of a species resembling *M. levicula* was found with the last, above Uri, measuring $6 \times 5 \times 4.5$ mm.

KALIELLA BARBAKPORENSIS, Pfr.

A single specimen of this widely spread species, measuring 6 mm. in height, was found in Kashmir. The specific name is badly chosen, as this is a hill species, (not found on the plains, unless transported on plants), and ranges throughout the Himalayas and also the mountain ranges of Southern India.

HEMIPLECTA MONTICOLA, Hutton.

H. labiata, Pfr.

Generally distributed throughout the Western Himalayas. In the valley of the Bichlári river, an affluent of the Chináb, this species occurs remarkably fine and in incredible numbers in the fissures of rocks, though few live specimens were procurable at the time of my visit. The colour of the shell is dark chestnut both above and below, and there are four or five prominent pale bars or transverse stripes, marking the seasonal arrest of growth and the position of successive epiphragms, formed during the period of hibernation. The epidermis is very thin and pale yellow, and the shell does not attain maturity under seven or eight years. The first five whorls are minutely shagreened, the remaining ones smooth but more or less transversely rugose.

My largest specimen measures $47 \times 39 \times 23$ mm. The species is particularly common below Nachilana in the Bichlári valley.

H. JAMUENSIS, n. s.

Aspectu inter H. monticolam et H. ligulatam. Testâ solidâ, convexâ, anguste umbilicatâ, supra levissime granuloso-corrugata (H. ligulatæ modo) subter lævigatâ. Colore supra pallide brunneo, subter albido. Anfractibus sex, lente crescentibus. Labio intus incrassato, simplici. Attingit ad $27 \times 23 \times 14$ mm.

Habitat in valle Jawi, inter Chineni et Adampur.

This species might be regarded by some as an impoverished race of the last, from which I have little doubt it is proximately derived, but it differs too much in size, colour, form, and range to be properly united therewith. Mr. W. Blanford suggests it may be the *H. monticola* of Pfeiffer, which is very likely. I have unfortunately no live shells, but the type of colouration in my best specimens is more of the type of *ligulata* than of *monticola*, being white below. It is I think clearly a species descended from *H. monticola*, and modified to meet the climatal conditions of the Jawi valley below Chineni, where the winter cold and summer heat are both more intense than is suitable for *monticola* on the one hand, or *ligulata* on the other.

TROCHOMORPHA HYBA, B.

Two dead adults and a living half grown shell were obtained by me on the hills behind Aijas, to the east of the Walar lake. The largest specimen measured $17 \times 16 \times 11$ mm. It recalls the Nilghiri *Thysonota guerini*, but the animal belongs to the *Zonitidae*.

This species occurs occasionally in thickets between Dalhousie and Chamba between 6000 and 7000 feet above the sea.

HELICARION FLEMINGII.

This species is not rare in the outer hills and two distinct races are discernible: the one (*a*) being confined to the higher and moister hills, whilst the other (*b*) occupies the warmer valleys and the drier ranges of less elevation.

a. My finest specimens of this race are from near Mari (Murree) where they were collected by my colleague Mr. Wynne. The finest measure $42 \times 31 \times 20$ mm., though shells rarely attain this size. Shells of the ordinary dimensions of 35 mm. are not rare in parts of the Jhilum valley about Uri, and even among the outer hills, and occur subfossil in the valley deposits (clays) in many places outside the main ranges and in the Suttlej valley. The reputed locality of the type, 'Sind', is open to considerable doubt, unless the specimen was imported in a plant case. In five specimens the lower part of the shell is lustrous, whilst the upper half has a dull silky sheen, from innumerable fine *striæ* which cover the surface.

b. This race runs considerably smaller than the last, the largest specimen of some hundreds measuring $22 \times 17 \times 12$ mm. It is a miniature of the last, and occurs abundantly in the Chináb valley above the junction of the Bichlári river and also at Dharmśála in the Kángra valley. The shell is almost wholly enveloped by the mantle when the animal is in motion.

There is yet another race which may perhaps prove a distinct species, but which at present I prefer to consider as a variety of the larger form of *H. flemingii*, and which I will term provisionally:—

c. var. altivagus. Of this form I have only a few dead shells. The largest measures $31 \times 23 \times 14$ mills. and it differs from the type by being much flatter. I only met with it sparingly above Uri.

H. SCUTELLA, B.

Sparingly distributed in the Western Himalayas at moderate elevations. The body delicately arched, like the outline of a triton's tail. This species occurs with the small race of *H. flemingii* both in the Chináb valley and at Dharmśála though nowhere so numerous.

H. MONTICOLA, B.

There is some confusion between this species, the last, and the next, which, without more information, I cannot clear up. Specimens received

by me from Benson under this name were certainly closely allied to the last. In the *Conchologia Indica*, however, a very different shell is figured (Plate CLII, figs. 1, 4,) and one which seems barely distinct (save in size only) from *H. cassida*, Hutton, also given on the same Plate. My coadjutor, Mr. Hanley, purchased most of Benson's types, but has most unfortunately not said if the figure is taken from one of them.

My own impression is, that *H. monticola*, B. is a near ally of *H. scutella*, B. and that the *monticola* figured in the *Conchologia Indica* is a mere immature specimen of *H. cassida*, Hutton. It is true the shell is said to be in one 'dull' in the other 'lustrous', but this may be the result of its condition, as in *H. flemingii*, the lustrous surface of the shell is covered with a dull epidermis, which in *scutella* is wanting, and I was much struck with the presence of this dull epidermis, as it is covered by the mantle; the shells of other *Zonitidæ* under such circumstances being usually lustrous.

H. CASSIDA, Hutton.

A single adult specimen of what I consider this species was taken by me under a stone above Uri. Two young shells (one of them forwarded to me by Mr. Lydekker) also seem to belong to this species, though the mouth is rounder and deeper than in the adult (*vide* *Conch. Indica*, Plate CLII, figs. 2, 3). This species might almost be ranged in *Paryphanta* and would seem to be rare as I have only seen the above three specimens.

VALLONIA PULCHELLA, Müll.

V. COSTATA, Müll.

The higher ranges.

FRUTICICOLA HUTTONI, Pfr.

Widely distributed, but individuals do not seem anywhere numerous.

PERONÆUS CENOPICTUS, Hutton.

Widely distributed and individuals numerous. In the North-western Punjab, this species harbours under stones, and is variable in size.

NAPÆUS CANDELARIS, Pfr.

N. domina, B. This is a common species being found about Mari and in various places in Kashmir, usually above 6000 feet, but occasionally lower. Sinistral shells are most numerous, but dextral ones also occur not rarely. My largest sinistral shell measures 35.6×9.2 and my smallest 27.7×8.7 mm. The dextral shells are smaller, ranging from 33×8.8 to 24×8.5 mm.

The shells vary somewhat in a large series, in tumidity and in the attenuation of the spire, and even in the number of whorls, a remark which applies to all the species of the genus, and proves the risk of creating new species from single examples.

I do not think that *N. domina*, B. can be separated, as the main distinction seems to be in the texture of the shell; but in this group the texture varies from horny and sub-diaphanous, in which the striped markings are conspicuous, to creamy porcellanous, in which they are more or less if not wholly obsolete. The difference too in this respect is considerable between the living and dead shells, and largely depends (unless I am much mistaken) on the conditions of climate and alimentation under which the animal lived.

A slender form is seen in places, with a thinner shell than the type, and indicating a passage to *N. kunawarensis*, Hutton. A typical example of this variety measures 26.5×8 mills.

In the above and in all the measurements which follow the short axis is measured just behind the aperture.

N. SINDICUS, B.

Of this species both dextral and sinistral shells occur, the former most numerous. The size ranges between 27×8 and $17 \times 3 \times 6.6$ mm. for dextral shells and 22×7 and 18.2×6.2 mm. for sinistral ones out of a large series. It occurs abundantly in the Jhilum valley about Chatur, (above Kohala) at low elevations, and elsewhere less commonly up to 3000 feet or thereabouts.

N. CŒLEBS, B.

This is a forest species, usually ranging from 5000 feet upwards. It is the most variable species of the group, both as regards size and form ranging from 22×8 to 14×6.2 mm. Some systematists might easily make six or eight species out of the varieties of this shell; but with a large, but by no means exhaustive, series before me, I cannot venture to specifically separate the very variable shells which a large series displays. I have never seen a sinistral specimen, but *N. boysianus*, B. looks like a sinistral example of the largest form of *cœlebs*.

N. ARCUATUS, Hutton.

Kashmir specimens range between 2×6.1 and 13.7×5 mills. A single dextral shell found by me measures 12×4 mills. It does not seem a common species. The habitat 'Moulmein' given in the Conchologia Indica is of course absurd, but for this and similar blunders I am nowise responsible, since the publishers declined to furnish me with proofs, as the work went through the press.

N. SEGREGATUS, B.

A single specimen of what seems a variety of this shell was found, but it had an abnormal look about it. It measures 11.2×5 mm and has the ordinary horny appearance of *cœlebs* and its allies. A smaller form, var. *pusillus*, would seem to belong to this species and is far from rare on the Chináb valley above 6000 feet. It only measures 9×3.8 mills.

N. PRETIOSUS, Cantor.

The type was obtained near the Jhilum on the well-contested battle-field of Chilianwalla. The species also occurs sparingly throughout the Jhilum valley below Uri, but is nowhere common except about Kathai fort on the right bank, where it is abundant, though I saw only dead shells. The range of this species must be very limited, as I have not noticed it to the eastward, or anywhere in the cis-Rávi country.

N. SMITHII, B.

An occasional individual of what I take to be this species, is here and there met with in the Jhilum valley below Uri, but I have only seen dead shells. It also occurs at Mari, where I have seen a few specimens, a trifle smaller than the type. My best specimen measures 11.1×5.5 mm. and exhibits the characteristic dilatation of the peristome.

N. RUFISTRIGATUS, B.

Common on the outer hills from the Jumna to the Indus. Closely allied to this species and with difficulty separable in a large series, are *N. eremita*, B., *N. indicus*, B., *N. salsicola*, B. and *N. spelæus*, Hutton, these two last forms being erroneously placed in my Catalogue (Thacker and Co., 1876,) under *Cylindrus*.

OPEAS GRACILIS, Hutton.

The outer hills bordering the plains, but not noticed in the valley.

CYLINDRUS INSULARIS, Ehr.

The outer hills and plains.

PUPA MUSCORUM, L.*P. GUTTA*, B.

Both these species no doubt spread over the higher ranges of Kashmir, though the type of the latter species has only been taken by me in Spiti.

P. HIMALAYANA, B.*P. HUTTONIANA*, B.

Both these species occur abundantly on the Panjál range and in the debris of streams flowing therefrom, whence they are carried down during floods into the plains.

P. — sp.

A single specimen of a *Pupa* somewhat of the *plicidens* type occurred in the Jhilum valley with numbers of the last two species. I do not know it, but hesitate to describe it as new, till it has been compared more fully than I have at present means of doing.

Alt. 2.5 mm.

CLAUSILIA CYLINDRICA, Gray.

I did not take this species in Kashmir, but as I took it in Dharmśála a little east of the Rávi, I have no doubt that it should be included in the Kashmir fauna.

C. WAAGENI, Stol.

A single dead shell of what is probably this species was found by me a little below Rámpur the first stage below Baramula. The type was found near Mari, and it doubtless ranges into Kashmir in suitable localities.

ENNEA BICOLOR, Hutton.

The outer hills, where it is almost invariably associated with *Opeas gracilis* and *Peronæus cænopictus*.

CÆLOSTELE SCALARIS, B.

GEOSTILBIA BALANUS, B.

Both these species are found in the outer hills bordering the plains, the former rather rarely.

LYMNÆA.

The species of this genus do not call for remark.

PLANORBIS.

Several small species of this genus, which my opportunities did not allow of my recording, have no doubt to be added to the Kashmir fauna.

CORBICULA KASHMIRENSIS, Desh.

My largest specimen, from near Soper, measures $45 \times 39 \times 23$ mm. Smaller specimens occur lower down the Jhilum near Baramula.

C. OCCIDENS, B.

Accompanies the last. My largest specimen measures $21 \times 17.5 \times 11.5$ mm. In Kashmir specimens the rufous rays (which Hanley says are rarely present) are rarely absent, but never very strongly marked and sometimes with difficulty visible.

SPHÆRIUM INDICUM, Desh.

PISIDIUM HYDASPICOLA, n. s.

Testâ sub-cordate ovali-tenui, exilissime striatâ, antice rotundatâ, postice vix truncatâ $4 \times 3.4 \times 2.5$ mm.

Habitat valle Kashmirense, in fluminibus ad Hydasphem fluentibus, prope Shypion.

The nearest ally of this species is *P. clarkeanum*, Nev., but it is more rounded in front and hardly truncated behind.

A single specimen only was found in the stream near Shypion, a feeder of the Jhilum.

The above is a very imperfect list of the shells of so diversified a region as regards surface and climate as Kashmir. The correct determination of the smaller fresh-water species of *Bithynia* and *Planorbis*, and of the species of *Sphærium* and *Pisidium* which almost certainly occur is difficult. *Unio* I have not noticed in the valley.

At page 41 of my Catalogue of Indian shells, I have given the Púñch Hills as a habitat of the operculate *Megalomastoma funiculatum* of Sikkim,

on the authority of shells received from Mr. Lydekker with that habitat, which subsequent enquiry has served to render extremely doubtful, and I have accordingly excluded the species from the Kashmir fauna.

In conclusion I would urge that visitors to Kashmir could hardly fail to add many species to the above list if they carefully collected in the higher ranges, and along routes not visited by me, especially the smaller species of *Pupa*, &c. which are most conveniently sought for among the light *rejectamenta* and vegetable refuse swept down by floods, and heaped up along the banks of streams in sheltered spots.

List of land and fresh-water shells, presumably inhabiting Kashmir and its vicinity. Shells, not seen by me, marked by an asterisk.

Paludomus tanjoriensis, Gmel.*

Melania tuberculata, Müll.

M. variabilis, B.*

Valvata piscinalis, Müll.

V. stoliczkana, Nevill.* (Cat. Moll. Ind. Mus.)

Vivipara bengalensis, Lam.*

V. dissimilis, Müll.*

Bithynia pulchella, B.

Hyalina lucida, Drap.

H. fulva, Drap.

Macrochlamys indica, B.

M. splendens, Hutton.

M. patane, B.

M. sp.

Kaliella Barakporensis, Pfr.

Hemiplecta monticola, Hutton.

H. jamuensis, Theob.

Trochomorpha hyba, B.

Helicarion cassida, Hutton.

H. flemingii, Pfr. (type and *var. minor*.)

H. flemingii, *var. altivagus*, Theob. (*un sp. nov. ?*)

H. monticola, B.

H. scutella, B.

Fruticicola huttoni, B.

Vallonia pulchella, Müll.

V. costata, Müll.

Peronæus cænopictus, Hutton.

Napæus candelaris, Pfr.

N. indicus, B.

N. cælebs, B.

- N. arcuatus*, Hutton.
N. pretiosus, Cantor.
N. segregatus, B.
N. smithii, B.
N. rufistrigatus, B.
N. vibex, Hutton.
Cylindrus insularis, Ehr.
Pupa muscorum, L.
P. gutta, B.
P. himalayana, B.
P. huttoniana, B.
P. sp.
Succinea pfeifferi, Ross.*
Clausilia cylindrica, Gray.
C. waageni, Stol.
Ennea bicolor, Hutton.
Opeas gracilis, Hutton.
Zua lubrica, Müll.*
Glessula huegeli, Pfr.*
Cælostele scalaris, B.
Geostilbia balanus, B.
Oarychium indicum, B.*
Lymnæa luteola, Lam.
L. peregra, Müll.
L. stagnalis, Müll.
L. auricularia, Müll.
L. truncatula, Müll.
Planorbis calathus, B.*
P. exustus, Desh.
P. carinatus, Müll.
Orbicula kashmirensis, Desh.
O. occidentis, B.
Sphærium indicum, Desh.*
Pisidium hydaspicola, Theob.
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X.—On some Mammals from Tenasserim.—By W. T. BLANFORD, F. R. S.

(Received and read March 6th, 1878.)

(With Plates VI, VII, VIII.)

The mammals described in the following notes are from two collections. The first and largest was made by Mr. W. Davison for Mr. Hume, to whom I am indebted for the specimens; the second, which although smaller, comprised several very interesting forms, was collected by Mr. Limborg. The bats procured by the latter have already been described by Mr. Dobson.*

The localities, and, in almost every case, the sexes have been carefully recorded on the specimens obtained by both the naturalists named. Mr. Davison's labels in many cases contain detailed measurements taken before skinning. As will be seen, several important additions are made to the Tenasserim fauna, and the most of these are from B  nkas  n in Southern Tenasserim, where some Malay forms have been obtained, which had not previously been noticed so far north.

In addition to the Tenasserim specimens, Mr. Hume has very kindly given to me a large portion of his mammalian collection, and has entrusted me with the whole for examination and description.

INSECTIVORA.

Gymnura rafflesi.

Vigers and Horsfield, Zool. Jour. III, p. 246;—Wagner, Schreber's *Sangth.* Supp. II, p. 46; V, p. 534.

This species was mentioned in Mr. Blyth's list of the mammals of Burma,[†] as probably existing in Mergui, although its occurrence within British limits had not been recorded. It has since been obtained at Báka-sún in Southern Tenasserim, by Mr. Davison, to whom I am indebted for a perfect female in spirit. The anatomy of the animal is almost unknown, but I hope to induce a more competent anatomist than I am to examine the specimen.

The skins from B nkas n vary much in the extent of white on the fore part of the body. Generally the head and neck are white with the exception of a broad black patch above each eye and a variable amount of black bristles mixed with white on the crown. The anterior portion of the back is clad with mixed white and black bristles, the proportion varying ; on the hinder back, sides, limbs and lower parts from the breast, the long hairs are generally black, but in one specimen there is a line of white bristles down the middle of the breast and belly ; this line is wanting in the other two

* J. A. S. B. 1877, Pt. 2, p. 312.

† J. A. S. B. 1875, Pt. 2, extra number, p. 32.

skins which I have examined. The extent of the white varies so much that it is not at all improbable that specimens wholly white or wholly black may occur. The fine woolly under fur is dusky olivaceous at the base, brown at the tips on the upper parts, ashy with brownish ends beneath. The terminal portion of the tail is compressed, and in some specimens partially or wholly white in colour, and the under surface of the tail is thinly clad throughout with scattered short bristles, about a quarter of an inch long. These bristles are wanting on the upper part of the tail, which has very much shorter scattered hairs. The small scales covering the tail are indistinctly arranged in rings, and subimbricate; on the lower surface the scales are convex and distinctly imbricate, the bristles arising from the interstices. Thus the under surface of the tail is very rough and may probably be of use to the animal in climbing.

The characters of the tail just mentioned do not appear to have been noticed in the published descriptions of *Gymnura*, all of which are probably copied from that by Horsfield and Vigors. Another important difference from the original account is to be found in the claws of the specimens before me not being retractile. In the original description* the retractility of the claws is mentioned, both in the Latin characters and in the English note pointing out the distinctions between *Gymnura* and *Tupaia*. It is possible that the Tenasserim animal differs from that found in Sumatra, but the distinction between retractile and non-retractile claws would in all probability be of generic importance, and it is difficult to conceive that two genera of insectivora, so closely resembling each other in their very peculiar external characters, and yet differing in so important a detail, should inhabit two regions of which the fauna is, for the most part, identical. At the same time it is possible that I am mistaken in referring the Tenasserim animal to *Gymnura rafflesi*.

The following are the dimensions of the female specimen in spirit—
inches.

Length from nose to anus,	12
„ of tail,	8·5
„ of ear from orifice,	0·94
„ of tarsus and hind foot (claws not included),	2·15

The stuffed specimen is nearly the same, except that the tail is rather longer. The dimensions given by Horsfield and Vigors for an adult are rather more;—head and body 14·25 inches, tail 10·5, whilst the tarsus is stated to be only 2 inches long, but the difference is trifling.

Mr. Davison informs me that *Gymnura* is purely nocturnal in its habits, and lives under the roots of trees. It has a peculiar and most offensive smell, not musky, but rather alliaceous, resembling decomposed cooked

* Zool. Jour., III, p. 248.

vegetables. There is a slight smell in the dried skin. The contents of the stomach in the spirit specimen appear to consist entirely of remains of insects, amongst which I can, I think, detect termites, but most of the fragments are too much broken for identification.

Tupaia peguana.

Jerdon, *Mam. Ind.* No. 88 :—Blyth *Mam. Burm.* No. 65.

Blyth in his Catalogue of the Mammalia in the Museum of the Asiatic Society classed the Peguan *Tupaia* as a variety of *T. ferruginea*, but in his Mammals of Burma he separated the Burmese species, as Jerdon had done. He, however, pointed out that the two are barely separable, and that a ferruginous tinge is present in some Burmese specimens.

Skins collected by Mr. Davison in Southern Tenasserim have all the posterior portion of the back distinctly ferruginous. Others from Myáwadi, west of Moulmain, are almost equally rufous on the rump, whilst other specimens again from the same neighbourhood have no rufous tinge. A specimen from Tavoy has scarcely a trace of rufescent. Without a larger series of Malaccan specimens than I have at hand, I cannot positively say that the two forms pass into each other, but I am strongly disposed to suspect that they do so.

The following dimensions taken on the animals when recently killed are recorded by Mr. Davison on his tickets.

	1 ♂ ad.	2 ♂ ad.	3 ♀
Nose to anus,	6·8	6·8	6·6
Tail from anus,	7·	6·8	6·4
Hairs at end of tail,	1·1	1·2	0·8
	<hr/>	<hr/>	<hr/>
Total	14·9	14·8	13·8
Length of fore foot (claws excluded),	0·68	1·	0·9
" hind foot ("),	1·65	1·75	1·69
" of ear externally,	0·8	0·2	0·35
" " inside from orifice,	0·6	0·55	0·45
Breadth of ear laid flat,	0·8	0·7	0·6

No. 1 is from Kaukaryit on the Houngdarau river, 2 and 3 from the neighbourhood of Myáwadi, all localities to the eastward of Moulmain.

CARNIVORA.

Prionodon maculosus, Pls. VI, VII.

W. Blanf. Proc. As. Soc. Bengal, March 1878, p. 93.

P. affinis *P. gracili*, sed major, atque maculis fasciisque fuscis majoribus ornatus; dorso nigrescenti-fusco, lineis sex albis angustis transfasciato, fasciâ albâ laterali utrinque post aurem oriente, usque ad femorem decur-

rente, lateribus maculis longis fuscis superne majusculis, subtus minoribus signatis, collo sursum duobus fasciis latis subnigris longitudinalibus, inter se vittâ albâ angustâ, medio fusco-lineatâ, discretis, notato; caudâ annulis septem fuscis albisque alternis circumdatâ, illis fere duplo latioribus, apice albescente.

Long. a rostro ad anum 18.25, caudæ sine pilis ad apicem 16, pilorum 0.75, tota 35; cranii 3, tarsi a calcaneo 2.8 poll. angl.

Hab. in provinciâ Tenasserim, (Davison, Limborg).

Upper part brownish black broken up by greyish white bands, lower parts white, tail brownish black with 7 white rings, tip whitish. Two broad black bands run down each side of the upper part of the neck, between them is a narrow greyish white band with a faint mesial dark streak, somewhat interrupted, and passing into two bands of elongate spots between the shoulders. The two broad dark bands pass into the dark patches of the back; on each side of these bands is a white rather wavy stripe, commencing at the ear and continued along the neck, above the shoulder, and down the side to the thighs, becoming more irregular behind; below this again is a dark band somewhat broken up into spots in front, passing over the shoulder, and continued as a line of large spots along the side. The back is chiefly brownish black, crossed by six narrow transverse whitish bands, the first five equidistant, the foremost communicating with the mesial neck band, and the hinder all uniting with the white band on the side, so as to break up the dark colour into large spots. There are small black spots on the fore neck, lower portion of the sides, and outside of the limbs, the spots on the fore neck forming an imperfect gorget. The white rings on the tail are not much more than half the breadth of the dark rings; the last dark ring, near the tip, and the first white ring are narrower than the others. Nose dark brown mixed with grey, a dark ring round each orbit with a streak running back to below the ear and another passing up to the crown; forehead between and behind the eyes, and in front of the ears, and cheeks, pale grey. Ears rounded and clad with blackish hairs outside and near the margin inside, a few long pale hairs on the inner surface of the ear conch. Whiskers long, extending to behind the ears, the upper brown, the lower entirely white. Soles, except the pads, which are naked, covered with fine hair.

The fur is soft and short throughout, that on the upper parts is ashy grey at the base; lower fur very fine, tips of the longer hairs black or white; none of the hairs are more than half an inch long on the back, being much shorter than in *P. pardicolor*.

The following dimensions are taken on a fully adult male specimen preserved whole in spirit. The length of the body would perhaps be an inch or two more in a fresh specimen, the other dimensions are probably unaltered.

	inches.
Length from nose to rump over curve of back,	18·25
„ of tail without the hairs at the end,	16·
„ of hairs at end of tail,	0·75
	<hr/>
Total	35.
Length from nose to rump in a straight line,	16·75
Height at shoulder* about,	6·
Hind foot and tarsus from toe to tarsal joint,	2 8
Length of ear from orifice,	1·05
„ „ from base of helix,	1·1
„ „ outside from crown of head,	0·65
„ from orifice of ear to eye,	1·2
„ from anterior angle of eye to nostril,	0·97
Longest whisker,	3·6

The skull of the same specimen measures :

	in.	metre
Length from occipital plane to anterior end of premaxillæ,...	3.	·076
„ from inferior margin of <i>foramen magnum</i> to do.,.....	2·9	·073
Greatest breadth across zygomatic arches,	1·5	·038
Breadth of brain case at posterior termination of zygomatic arches,	1·	·025
Least breadth of brain case behind post-orbital processes, ...	0·45	·0115
Length of suture between nasal bones,	0·62	·015
„ of bony palate from opening of posterior nares to incisors,	1·4	·035
Breadth between posterior molars,	0 53	·013
Length of mandible from angle to symphysis,	2·05	·0515
Height of ditto,	0·8	·020

The stuffed skin was most carefully set by Mr. Davison himself, the dimensions being made exactly the same as those taken on the body before skinning. The present measurements are—nose to insertion of tail 19 inches, tail with hair 16½ in., total 35½, nearly the same as in the specimen in spirit. It is probable that this skin also has contracted a little in drying.

This species appears well distinguished from *P. gracilis* and *P. pardicolor* by its larger size, and by the much greater prevalence of dark colour on the upper surface generally. In external characters *P. maculosus* is nearer to the Malay species, *P. gracilis*, the Himalayan *P. pardicolor*

* Measured from the posterior foot pad to the top of the back between the shoulders, the leg being straight.

having the upper parts covered with comparatively small spots, and more numerous rings on the tail.* With *P. gracilis* I am only acquainted by description and figures.† Judging by these, the principal difference in the colouration is that, in *P. gracilis*, the pale tint prevails very much more than in *P. maculosus*, the upper parts of the former being marked by irregularly shaped blackish spots on a pale ground, whereas the upper surface of the latter is dark, with a few white streaks dividing the colour into patches. On the tail of *P. gracilis* the dark rings are represented as narrower, and, towards the tip, much narrower than the white rings, and there is a long white tip. In *P. maculosus* the dark tail rings are nearly twice as broad as the light, and the white tail tip is very short, shorter than the last dark ring. The distribution of colour on the head also appears different, the whole nasal region in front of the eyes being dark in *P. maculosus*, but not in the figure of *P. gracilis*. The more important dimensions of *P. gracilis* as given by Horsfield are; length of the body from the extremity of the nose to the root of the tail 1 ft. $3\frac{1}{2}$ in., length of tail 1 ft. $\frac{1}{2}$ in. It is probable these measurements are from a stuffed specimen, but the much smaller size of *P. gracilis* is shewn by the dimensions of the skull given by Dr. Gray‡ whose measurements of the two species *P. gracilis* and *P. pardicolor* are the following. Those of *P. maculosus* are appended for comparison.

	<i>P. gracilis.</i>	<i>P. pardicolor.</i>	<i>P. maculosus.</i>
Length of skull,	2" 7"§	2" 6"	3"
Width at brain case,.....	11"	10½"	1"
Width of zygomatic arch,	1" 3¼"	1" 2½"	1" 6"

This gives the idea that the skull of *P. maculosus* is longer and that the breadth across the zygomatic arches is greater in proportion to the width of the brain case than in the other two species, and judging from an imperfect skull of *P. pardicolor* in my possession, this is the case. I think it probable that *P. maculosus* is a much more powerful animal than either of the other species. The nose is proportionally narrower, more pointed and shorter in *P. pardicolor*, and the bony palate extends a shorter distance behind the posterior molars. From the opening of the posterior nares to the anterior palatal foramina the distance is 0·93 inch in *P. pardicolor*, 1·27 in *P. maculosus*, the form and position of the foramina being similar in the two.

* Jerdon, Mam. Ind. p. 124, says eight or nine. I count ten pale rings besides the whitish tail tip on two Sikkim specimens, received from Mr. Mandelli. The rings near the base and tip of the tail are narrower than in the middle.

† *Felis gracilis*, Horsfield. Res. in Java. This work is not paged, and the plates are not numbered. The animal is described and figured, and the head, feet and dentition are separately represented on another plate.

‡ Cat. Carn. &c., Mam. Brit. Mus. 1869.

§ In the original 1" 7" but this is, I think, clearly a misprint for 2" 7".

The first specimen of this species (a very beautiful and perfect skin) was obtained by Mr. Davison at B  nkas  n in Southern Tenasserim. The animal was caught in a trap. The second specimen was procured by Mr. Limborg to the East of Moulmain.

Martes flavigula.

Blyth, J. A. S. B., XXVI, p. 316; XLIV, Pt. 2, extra number, p. 29:—Jerdon, Mam. Ind. p. 82.

A skin belonging to the Malayan race, distinguished from the Himalayan form by the crown of the head and nape being brown instead of black, by wanting the white chin, and by the fur being shorter, was obtained at B  nkas  n in Southern Tenasserim by Mr. Davison. The Himalayan form is recorded from Arakan by Mr. Blyth, so that both are found in British Burma.

RODENTIA.

Sciurus rufigenis, Pls. VII, VIII.

W. Blanf. Proc. As. Soc. Bengal, March 1878, p. 93.

S. medius, *S. atridorsalem canicepemque magnitudine subaequans, sed caud   corpore cum capite paullo brevior, rostro longo; superne fusco-olivaceus, punctiunculis minutis nigris fulvisque variatus, subtus albus, maculae albae post aurem utram signatus, fronte rufescente, genis ferrugineis, mystacibus nigris, caud   distich  , superne can  , pilis nigris albo-terminatis atque semel annulatis indut  , subtus castane  . Long. corporis a rostro ad anum 8, caud  , pilis ad extremitatem non inclusis 6.5, plant   sine ungibus 1.8.*

Hab. in sylvis densis, ad latera montis Muleyit dicti, in provinci   Tenasserim Burmanicae, (Davison, Limborg).

This squirrel is nearly the same size as *S. caniceps* and *S. atrodorsalis*, but the tail is much shorter, its length, without counting the hairs at the end, being always considerably less than that of the head and body; it is distinctly distichous below. Fur soft throughout.

Upper parts dark olive, frizzled, cheeks ferruginous, a small white spot behind the ear, lower parts white, tail hoary, black with white rings and tips above, chestnut below.

The colour of the back and sides resembles that of specimens of *S. caniceps* in which there is no yellow or rufous tinge, being a fine mixture of black and pale yellow, the sides rather paler. The fur on the back, as in several allied species of squirrel, is of two kinds, the finer and shorter hairs being dark leaden colour at the base, pale yellowish grey at the tips, and about a quarter of an inch long in the middle of the back, the longer hairs are coarser, about half an inch long, and black with a pale yellow ring near

the end, the tips being black. As usual the longer hairs are most abundant near the middle of the back, less so on the sides. Forehead rufous mixed with black, the sides of the head are dark ferruginous above, paler below, shading off gradually into the colour of the face and throat. Ears rounded, covered thinly inside and out with short hairs; a little patch of silky white hair behind each ear is concealed by the ear conch when the ears are laid back.* Whiskers black. The hairs of the lower parts are dark grey at the base, white at the ends, there is a tinge of rufous on the fore neck and throat in some specimens. Fore limbs yellowish olive outside, like the sides, whitish inside, hind limbs also whitish within, but more rufous outside. Tail clad above with black hairs, having a white ring near, but not at their base, and white tips, so as to produce a very beautiful hoary appearance, lower surface of the tail chestnut, the longer hairs on the sides with black and white tips

The following dimensions in inches were taken by Mr. Davison on fresh specimens :

	♂.	♀ ad.	♀ ad.
Length from nose to insertion of tail,.....	7.3	8.2	8.1
„ of tail without hairs at end,	5.7	6.0	6.5
„ of hairs at end of tail,	1.5	2.1	1.3
Total	14.5	16.3	15.9
Length of fore foot (palma) (claws not measured),.....	1.15	1.1	1.1
Length of hind foot from heel without claws,	1.75	1.85	1.8
Height of ear outside,	0.5	0.5	0.55
„ inside from orifice,	0.8	0.8	0.8

The skull (Plate VII) differs considerably from those of *S. lokrioides*, *S. atridorsalis*, *S. caniceps*, *S. phayrei*, *S. blanfordi* and all other allied species with which I have been able to compare it, in the narrow and singularly elongate nasal portion, in which character the present species shews an approach to *Rheithrosciurus* of Gray.

The following are the dimensions of the skull of the present species, compared with those of some of the other Himalayan and Burmese forms.

	<i>S. rufignis.</i> ♂ ad.	<i>S. lokrioides.</i> ♀ ad.	<i>S. atridorsalis.</i> ♂ ad.	<i>S. caniceps.</i> ♂ ad.
Length from occiput to end of nasals,...	2.07	1.85	1.95	2.33
Breadth across zygomatic arches,.....	1.2	1.06	1.18	1.37
„ of brainpan at posterior termination of zygomatic arches,	0.95	0.9	0.93	1.02

* This white mark is represented too large in the plate.

	<i>S. rufigenis</i> .	<i>S. lokrioides</i> .	<i>S. atridor-salis</i> .	<i>S. caniceps</i> .
Breadth across behind post orbital processes,	0·75	0·65	0·7	0·82
„ of frontals between orbits,	0·62	0·63	0·75	0·9
Length of suture between nasal bones,...	0·62	0·53	0·52	0·73
„ of upper row of molars,	0·42	0·36	0·37	0·44
„ of bony palate behind incisors,...	0·9	0·82	0·82	1·
Width of bony palate between posterior molars,	0·27	0·24	0·23	0·3
Length of mandible from angle to symphysis,	1·	0·96	1·05	1·25
„ of row of lower molars,	0·42	0·37	0·38	0·44

Four specimens of this squirrel were obtained by Mr. Davison at the end of January and beginning of February 1877; all were procured in dense forest, at an elevation of above 5000 feet, on the sides of Mooleyit, a lofty mountain east of Moulmain on the range separating the Houndgarau from the Thoug Yin valley. A single specimen was subsequently procured in the same locality by Mr. Limborg and this was the first to reach me.

None of the other Burmese or Himalayan squirrels resemble the present form, nor am I acquainted with any Malay species with similar colouration. The nearest approach is perhaps made by *S. pernyi*, found at Se-chuen in China.* This species has a yellow spot behind the ear, the lower surface of the tail is ferruginous, and the belly white, but it wants the ferruginous cheeks, it has no white tips to the hairs in the upper surface of the tail, and it is more rufous above, the latter character being, however, of little or no importance.

The Himalayan *Sciurus lokriah* also possesses, I find, the small whitish tuft behind the ear, though less developed than in *S. rufigenis*; the colouring of the lower parts and tail are, however, conspicuously distinct in the two forms. The presence of the white spot in *S. lokriah* affords an excellent character for distinguishing this species from *S. lokrioides*.†

* Milne Edwards, Rev. et Mag. Zool. 1867, p. 230, pl. 19.

† According to Gray, A. M. N. H. Ser. 3, XX, pp. 274, 281, the true *S. lokrioides* of Hodgson is the species with a black tail tip, *S. assamensis* of McClelland and Blyth. The species called *S. lokrioides* by all Indian naturalists is re-named *Macrozue similis* by Gray. As Hodgson's types are in the British Museum and are quoted by Dr. Gray, he may be right, though it is very remarkable that he should be, because the species commonly referred to *S. lokrioides* abounds in Nepal, where Hodgson of course collected it, whilst I doubt if *S. assamensis* be found there. Dr. Anderson has especially examined the British Museum specimens, and will I believe clear up these difficulties.

Sciurus atridorsalis.

Gray, Ann. Mag. N. H., 1842, Ser. 1, Vol. X, p. 263; 1867, Ser. 3, Vol. XX, p. 284;—Blyth, J. A. S. B. XXIV, p. 477; XXVIII, p. 276; XLIV, Pt. 2. Extra number, p. 36;—Beavan, P. Z. S. 1866, p. 428.

This is certainly the most variable of the Burmese squirrels. The back varies in colour from dark speckled grey, with scarcely a tinge of fulvous, to grizzled rufous tawny, the head being in the former case the same colour as the back, or slightly rufescent, in the latter distinctly ferruginous, the ears being usually even deeper rufous than the forehead. Occasionally the whole back from the nape to the insertion of the tail, is black; more commonly there is a black patch from between the shoulders to the rump, but frequently the area of black is shorter and narrower, and occasionally, especially in the more rufous specimens, not a trace remains. The whiskers are sometimes entirely white, sometimes all black, occasionally mixed white and black. The tail is normally grey like the sides, with more or less distinct transverse bands, due to the hairs being ringed greyish white and black, but in some specimens all the hairs are black except at their extreme tip, and in others, they are entirely pale rufous, save at the extreme base, and even this amount of dark colouration disappears towards the tip of the tail. The lower surface, including the breast, abdomen and inside of the limbs is normally rich bay, but sometimes chesnut, pale ferruginous or even pale rufescent, in the dark rufous form the red sometimes extends to the throat, in other cases the lower neck is grey, or the whole central portion is pale rufous, and only the lateral parts bay, especially on the breast. I have two specimens also in which the middle of the breast and abdomen is grizzled like the sides and throat, the lateral portions of the lower parts alone being bay. This shews a complete passage into *S. gordonii**: it is true that in the latter, so far as I know, there is no black on the back, but as this peculiarity is not constant in true *S. atridorsalis*, the distinction is evidently insufficient. The paler under parts may possibly be due to immaturity; with this exception however I cannot find that the variations I have mentioned are due to either sex or age. All specimens from Myawadi appear to have black whiskers, and all from Moulmain white, but from Kaukaryit, on the Hounghdarau river, south of Myawadi, I have both forms. I am indebted to Mr. Hume for a superb series of this species and of *S. caniceps*, and I have also a considerable number of both from the collections made by Mr. Limborg. These two are in fact the commonest squirrels of Tenasserim.

The following are measurements by Mr. Davison:

* Anderson, P. Z. S., 1871, p. 140.

	1	2 ♂ juv.	3 ♂	4 ♀ ad.	5 ♂ ad.	6 ♂ ad.
Length from nose to anus,.....	8·	8	8·5	8·65	8·9	7·62
„ of tail from anus,	7·5	7·9	7·4	7·7	7·75	8·3
„ of hairs at end of tail,.....	2·5	2·5	2·7	2·4	2·5	2·
Total	18·0	18·4	18·6	18·75	18·15	17·92
Length of fore foot (without claws),	0·82	1·15	1·18	1·2	1·2	1·19
„ hind foot and tarsus (do.),	1·55	1·85	1·7	1·8	1·9	1·8
Height of ear outside,.....		0·5	0·55	0·4	0·5	0·55
„ inside from orifice,	0·55	0·65	0·71	0·9	0·92	0·68

Some measurements of spirit specimens differ but little from the above.

I have only seen *S. atridorsalis* from the northern portion of the Tenasserim provinces, the species has not yet, so far as I am aware, been recorded from Mergui or Tavoy, nor is it known to occur west of the Salween river. It abounds around Moulmain and Amherst, and in the valleys of the Houngharau and Attaran rivers.*

S. phayrei.

Blyth, J. A. S. B., XXIV, 1855, p. 476; XLIV, Pt. 2, Extra number, p. 36;—Peters, P. Z. S. 1866, p. 429,—Gray, Ann. Mag. Nat. Hist. Ser. 3, XX, p. 277.

S. hyperythrus, Blyth, J. A. S. B., XXIV, p. 474.

This species, as noticed by Blyth, is only known to occur west of the Salween. It is not, so far as I am aware, found west of the Sitoung; in the Irawadi valley in Pegu, it appears to be replaced by *S. pygerythrus*, whilst further north, around Ava, it is represented by the closely allied *S. blanfordi*, into which it doubtless passes. *S. phayrei*, Mr. Davison tells me, is found north as far as Pah-Khyoung at the southern extremity of Kareni; (the country of the Red Karens).

The following are dimensions of a female from Thatone:

	in.
Length from nose to anus,.....	9·6
„ of tail from anus,	8·8
„ of hairs at end of tail,	2·3
Total	20·7
Length of fore foot (without claws),.....	1·2
„ of hind foot and tarsus (do.),	1·8
„ of ear outside,	0·5
„ „ inside from orifice,	0·7

* Error is proverbially immortal, and consequently, attention cannot be too frequently called to the circumstance that the localities assigned to this species and to many other Asiatic squirrels in Dr. Gray's lists are incorrect.

S. caniceps.

Gray, Ann. Mag. Nat. Hist. 1842, Ser. 1, Vol. X, p. 263; Ser. 3, XX, p. 280;
 Blyth, J. A. S. B., 1876, XLIV, Pt. 2, Extra number, p. 36.

S. chrysnotus, Blyth, J. A. S. B., XVI, p. 873; XXIV, p. 474.

S. concolor, Blyth, J. A. S. B., XXIV, p. 474.

Although there is nothing like the variation in colouring in this species that there is in *S. atridorsalis*, still a wide difference is found between different specimens, especially in the colouration of the upper parts, as Blyth and Gray have noticed; some having the back pale ferruginous, whilst others have the whole upper surface dull olivaceous grey, minutely punctulated with scarcely a trace of rufous. The most rufous specimens I have seen are from the Houngdarau valley, east of Moulmain, in these the crown of the head, the back from the nape to the commencement of the tail and the sides are pale rusty red with scarcely a trace of punctulation. Moulmain specimens, as a rule, are punctulated and merely washed with rufous, especially on the anterior part of the back, or the rufous tinge is very faint, and sometimes wanting. Blyth has noticed* that the least rufous specimen he had seen came from Mergui. Southern Tenasserim specimens, judging from one skin collected by Mr. Davison in Tavoy, and several from Bánkasún, want the ferruginous tinge entirely. To the Bánkasún specimens I will refer further presently.

There is also some variation in the colouration of the abdomen. Some specimens are almost white below, others more or less cinerous and more or less punctulated. In some the colour of the lower parts is olivaceous grey, scarcely paler than the sides. In very many specimens there is a dark mesial line more or less developed, but it is not constant. These differences of colouration in the under surface are apparently quite independent of the degree to which the upper parts are washed with rufous, and none of the differences, so far as I can judge, are due to age or sex.

The specimens from Bánkasún in the extreme south of the Tenasserim provinces are decidedly darker, both above and below, than any I have examined from farther north, much darker even than the Tavoy specimen. The Bánkasún skins are almost olive green above, distinctly punctulated, and scarcely paler but rather greyer below. In two specimens out of three there is a darker mesial line beneath. The only difference between these skins and *S. concolor* of Blyth from Malacca, of which species I have examined the type in the Indian Museum, consists in the latter having a slight rufous wash on the upper surface. I have no doubt that the Bánkasún squirrel passes into the Malaccan *S. concolor*. These dark olivaceous forms may perhaps be sufficiently distinct to constitute a local

* J. A. S. B., 1855, XXIV, p. 475.

race, for which Blyth's name may be retained, but they are not, I think, really separable from *S. caniceps*.

The following dimensions in the flesh of two adult females, are taken from Mr. Davison's tickets; both specimens are from Kaukaryit in the Houngdarau valley. I also add (3 and 4) the measurements of two spirit specimens from Mr. Limborg's collection.

	1 ♀	2 ♀	3 ♂	4 ♀,
Length from nose to anus,	8·2	8·7	9·25	8·75
„ of tail from anus,	9·2	9·8	7·75	9·25
„ of hairs at end of tail,	2·5	2·3	3	3·25
	<hr/>			
Total	19·9	20·8	20·	21·25
Length of fore foot (without claws),	1·2	1·2	1·32	1·22
„ of hind foot and tarsus (do.),	1·8	1·85	2·	2·05
Height of ear outside,	0·4	0·52	0·45	0·45
„ inside from orifice,	0·8	0·9	0·83	0·8

S. caniceps ranges throughout the Tenasserim provinces from Moulmain to the banks of the Pakchoung. I have also one specimen labelled from Thatone, which is to the west of the Salween, but the skin so precisely resembles the peculiarly dark olive specimens from Bánkasún that I am inclined to suspect the label must have been changed by accident.

S. mouhoti.

Gray, P. Z. S., 1861, p. 137.

S. berdmorei, Gray, Ann. Mag. Nat. Hist. Ser. 3, XX, p. 279. (? an *S. berdmorei* versus Blyth.)

Several skins were procured by Mr. Davison, and a specimen in spirit was collected by Mr. Limborg, of a species of striped squirrel differing somewhat from the Museum specimens of *S. berdmorei*, but agreeing very well with Gray's description of *S. mouhoti* from Camboja.* The museum specimens of *S. berdmorei*, said by Blyth† to have been collected by himself in Martaban‡, have three broad black stripes along the back, whereas in the specimens before me there are no black stripes and no distinct darker

* Especially with the second description quoted above from the 'Annals and Magazine of Natural History.' In the original description the interspace between the pale lateral lines was said to be black, in the second account blackish, which accords better with Mr. Davison's specimens. The remark appended to the original description of *S. Mouhoti*, that it differs from most squirrels of the same size by having the three streaks on the upper part of the back, I understand to refer to the lateral bands, a dark one between two pale stripes, on the upper part of the side, not on the lower as in *S. vittatus* and its allies.

† Cat. Mam. Mus. As. Soc. p. 106.

‡ J. A. S. B., 1862, XXXI, p. 333.

band in the middle of the back, although there is a slight indication of darkening in one specimen. In the original description of *S. berdmorei*,* it was said to have an obscure pale central dorsal streak, flanked by a blackish band, but in a subsequent description† of an example sent from Moulmain the three black bands of the back were especially noticed. Subsequently *S. mouhoti* was described by Gray and then identified by the describer with *S. berdmorei*, an identification adopted by Blyth.‡ It is possible that the two forms pass into each other, but they look very different, and for the present I prefer retaining Gray's name for the variety before me, of which the following is a description.

The upper surface is yellowish brown, punctulated, the hairs being black with two buff rings. The fine woolly under-fur is dark slate-coloured at the base with buff tips. On each side of the back there are two longitudinal pale lines extending from the shoulder to the thigh, the upper narrow and well defined, the lower broader and less marked. Between the two and above the upper pale line, the fur is darker in some specimens, but apparently this is not constant. The sides below the lower pale lateral bands are greyish brown punctulated. The lower parts throughout are white, sometimes tinged with buff. The tail hairs are light brown at the base, then black, then brown again, then black to near the tips, which are whitish. Whiskers black. The ears are rounded with very short hairs outside.

The bare planta on the hind feet extends further towards the heel than in the more typically arboreal squirrels, *S. caniceps*, *S. atridorsalis* and *S. phayrei*, in which the bare portion ends about $\frac{1}{4}$ to $\frac{1}{2}$ of an inch from the proximal extremity of the tarsus, whereas in *S. mouhoti* it extends to the joint. The claws too in *S. mouhoti* are rather less curved, and the pads on the feet appear more raised.

The following are measurements in inches taken by Mr. Davison, before skinning, on two females, the first from Kaukaryit, the second from Myawadi, both east of Moulmain, and of the male preserved by Mr. Limborg in spirit.

	1♀	2♀	3♂
Length from nose to anus,	7·3	6·8	6·4
„ of tail from anus,.....	5·8	5·6	5·4
„ of hairs at end of tail,	2·	2·	
Total	15·1	14·4	

* J. A. S. B., 1849, XVIII, Pt. 1, p. 603.

† J. A. S. B., 1859, XXVIII, p. 418.

‡ J. A. S. B., 1875, XLIV, Pt. 2, Extra number, p. 37.

	1 ♀	2 ♀	3 ♂
Length of fore foot (without claws),.....	0·88	0·85	0·85
„ hind foot and tarsus (do.),	1·53	1·5	1·65
Height of ear outside,.....	0·4	0·5	0·35
„ inside from orifice,	0·8	0·8	0·65

Blyth in his list of the Mammals of Burma, suggests that *S. berdmorei* should perhaps more properly range as a species of *Tamias*. In the specimen of *S. mouhoti* in spirit, obtained by Mr. Limborg, I cannot detect any cheek pouches. Unfortunately the skull of this specimen is too much injured to be extracted for measurement.

The only specimens of this squirrel hitherto obtained are from the country east of Moulmain. Mr. Davison informs me that he has never seen either this or *S. berdmorei* in Southern Tenasserim. The latter is, however, reported with some doubt by Blyth from Mergui.

S. barbei.

Blyth, J. A. S. B., XVI, p. 875, Pl. XXXVI, fig. 3; XVIII, p. 603; XLIV, Pt. 2, Extra number, p. 38.

The following are the dimensions of three fresh specimens recorded by Mr. Davison: 1 and 3 from Kaukaryit on the Houngdarau river, 2 from Myawadi.

	1 ♂ ad.	2 ♂ ad.	3 ♀
Length from nose to anus,.....	4·65	4·6	4·7
„ of tail from anus,	5·	4·9	5·
„ of hairs at end of tail,	0·85	1·5	1·
Total	10·5	11·0	10·7
Length of fore foot (without claws),.....	0·75	0·7	0·7
„ hind foot and tarsus (do.),	1·	1·12	1·15
Height of ear outside,.....	0·4	0·45	0·45
„ inside from orifice,.....	0·58	0·6	0·6

This species appears to be found throughout Tenasserim, extending south to Malacca. Specimens from Southern Tenasserim and from Malacca have much darker dorsal bands and shorter ear tufts than those from the neighbourhood of Moulmain. Judging from the specimens before me too, the southern form appears smaller, with a comparatively shorter tail, but I have no fresh measurements. The original types came from Yé, about half way between Moulmain and Tavoy, and probably belonged to the Northern variety.

Pteromys cineraceus.

Blyth, J. A. S. B., XVI, p. 865; XXVIII, p. 276; XLIV, Pt. 2, Extra number, p. 35.

A fine female skin from Wimpong, 15 miles from Thatone, (west of the Salween) has the tip very little darker than the remainder of the tail, and is easily distinguished from *P. oral* of Southern India by its greyer colour, and by the lower parts being white. The following are the dimensions noted by Mr. Davison on the fresh specimen.

	in.
Length from nose to anus,	18·5
„ of tail from anus,.....	22·5
„ of hairs at end of tail,.....	3·
	<hr/>
Total	44·0
Length of fore foot (without claws),	2·4
„ of hind foot and tarsus (do.),.....	3·
Height of ear outside,	1·5
„ inside from orifice,	2·

Rhizomys castaneus.

Blyth, J. A. S. B., XII, p. 1007; XLIV, Pt. 2, Extra number, p. 41.

A specimen from Thatone in Martaban, west of the Salween river, and another from, I believe, the same neighbourhood, differ from Arakan and Pegu specimens by having a white spot in the middle of the forehead, as in some other species of the genus. As there appears no other distinction, and as the spot is evidently variable, being far more distinct in one specimen before me than in another, I do not think this form is more than a variety.

Mus robustulus.

Blyth, J. A. S. B., XXVIII, p. 294; XLIV, Pt. 2, Extra number, p. 39.

Specimens in spirit from near Maulmain collected by Mr. Limborg do not appear to me distinct from the common tree rat of lower Bengal, *M. rufescens* of Blyth and Jerdon, but not, I think, of Gray, as in the original description by the latter the tail is said to be shorter than the body, whereas in both the Bengal and Burmese rats the tail exceeds the head and body in length. I can see no difference in the skulls of the Bengal and Tenasserim rats.

UNGULATA.

Tragulus napu.

Moschus napu, Raffles, Linn. Trans. XIII, p. 262.

Tragulus napu, A. Milne-Edwards, Ann. Sc. Nat. Ser. 5, II, 1864, pp. 106, 158, Pl. II, fig. 2;—Blyth, J. A. S. B., XLIV, 1875, Pt. 2, Extra number, p. 44; P. Z. S., 1864, p. 483.

T. fuscatus, Blyth, J. A. S. B., XXVII, 1858, p. 278.

T. javanicus, Blyth, Cat. Mam. Mus. As. Soc., p. 155, nec Pallas.

As was suggested by Blyth in his remarks on *Tragulus kanchil*, the larger form of chevrotain is also found in Southern Tenasserim, Mr. Davison having procured an adult and a young animal from Bánkasún. Owing to the extreme confusion which formerly prevailed as to the synonymy of the *Traguli*, the nomenclature and distribution of the different species cannot be said yet to be rightly determined in all cases, but it is clear that two distinct forms are found in the Tenasserim provinces and these forms appear to be the *T. kanchil* and *T. napu* of A. Milne-Edwards' monograph of the *Tragulidæ* in the 'Annales des Sciences Naturelles', as has already been pointed out by Mr. Blyth.

The most striking differences between the two species are,—first, size; *T. napu* being probably thrice the weight of *T. kanchil*;—second, the much stouter limbs of the former; the length of the tarsus and hind foot in two specimens before me of *T. napu* and *T. kanchil* respectively being 5·85 and 4·8, whilst the circumference of each tarsus in the middle is 1·3 and 0·85;—and, third, colouration, especially below. There is but little difference above; both are brown, becoming paler and greyer on the sides, but the dark line from the nape down the back of the neck is much more distinct in *T. kanchil*. The colouration of the throat and belly, however, is very different; in *T. napu* there are five white stripes on the throat, one longitudinal in the middle, and two oblique stripes on each side, the upper lateral band being much shorter than the lower. In the adult skin from Tenasserim all these bands unite in front, but not in the young specimen, in which the median stripe is separated from the others, as described by Milne-Edwards. The interspaces between the white bands are dark brown, darker than the sides of the neck, but this appears sometimes to be the case in *T. kanchil* also. The abdomen in adult *T. napu* is mostly white, the breast and the space between the thighs purer white than the rest; in the young all the middle portion of the abdomen between the broad white breast and the narrower white groin is smokey brown; in both there is a rudimentary dark median band, not nearly so distinct as in *T. kanchil*.

In *T. kanchil* there are but three white stripes on the throat, the median line being sometimes entirely distinct from the two broad and long

oblique lateral stripes, sometimes coalescing with them in front; the abdomen is pale rufous and white in patches, the centre of the anterior portion and the sides of the posterior portion being white, and the remainder rufous, but the proportion of the two colours varies; there is, however, a well marked dark median line along the anterior half beginning from the dark transverse band on the breast.

In both species the rump is rufous, and the tail brown above, white below and at the tip. All the differences noticed, except the number of white stripes on the throat, have already been pointed out by Blyth.

XI.—*List of Hymenoptera obtained by MR. OSSIAN LIMBORG east of Maulmain, Tenasserim Provinces, during the months of December 1876, January, March and April 1877, with descriptions of new species:—by FREDERICK SMITH, Biological Department, British Museum. (Communicated by J. WOOD-MASON.)*

(Received 30th August, 1878.)

Scoliadæ.

1. ELIS LINDENT, St. Fargeau, Hym. III, 500.
2. LIACOS ANALIS, Fabr.

Pompilidæ.

3. POMPILUS PEREGRINUS, Smith.
4. POMPILUS VITIOSUS, n. sp.

Male. Ferruginous: the thorax with black markings, and the abdomen fusco-ferruginous towards the apex. The antennæ fuscous above; the eyes and tips of the mandibles black; the front, before the antennæ, pale reddish yellow. The mesothorax with a black longitudinal stripe on each side; the thorax at the sides and beneath paler than the disk, and with a golden lustre; the pectus black; wings fusco-hyaline. The extreme base of the abdomen black; the first, second and third segments with their apical margins fusco-ferruginous, the following segments entirely so.

Length $6\frac{1}{2}$ lines.

Sphegidæ.

5. AMMOPHILA NIGRIPES, Smith, Cat. Hym. Ins., Pt. IV, p. 215.
6. CHLOBION LOBATUM, Fabr., Ent. Syst., II, p. 206.

Bembicoidæ.**7. BEMBEX FOSSORIVS, n. sp.**

Female. Black, with lacteous fasciæ and markings above, the legs faintly yellow. The clypeus, labrum, mandibles, the scape in front, a narrow line at the inner orbits of the eyes, and a broad one behind, not extending to their summit, white, faintly yellow behind the eyes; the tips of the mandibles, and a transverse spot at the base of the clypeus, black; the vertex with a downy white pubescence. Thorax smooth and shining above, and very finely punctured; the margin of the prothorax, a line over the tegulæ, uniting with a curved one on the hinder margin of the scutellum, a narrow transverse one on the post-scutellum, a curved transverse one on the metathorax, and its posterior lateral angles, lacteous; the sides of the thorax and the legs more or less faintly yellowish; the coxæ and femora with black markings; the claw-joint of the tarsi fuscous; wings hyaline, the nervures fusco-ferruginous. The segments of the abdomen with broad lacteous fasciæ a little before the apical margins of the segments; the fasciæ with their anterior margins emarginate laterally; black beneath, with the lateral posterior angles lacteous.

Length $8\frac{1}{2}$ lines.

Eumenidæ.**8. EUMENES ARCUATUS, Fabr., Ent. Syst., II, p. 276.****Vespidæ.****9. POLYBIA SUMATRENSIS, Sauss.****10. P. ORIENTALIS, Sauss., Mon. Guépes Soc., p. 208.****Poneridæ.****11. DIACAMMA SCALPATRUM, Smith, Cat. Hym. Ins., Form., p. 84.****Apidæ.****12. MEGACHILE DIMIDIATA, Smith, Cat. Hym. Ins., Apidæ, Pt. I, p. 174.****13. XYLOCOPA LATIPES, Drury, Illust. Exot. Ins., II, p. 98.****14. X. ÆSTUANS, Linn., Syst. Nat., I, p. 961.****15. X. COLLARIS, St. Farg., Hym. II, p. 189.****16. X. AMETHYSTINA, Latr., Ins. III, p. 375.****17. BOMBUS EXIMIUS, Smith, Cat. Hym. Ins., Apidæ, II, p. 403.****18. BOMBUS MONTIVAGUS, n. sp. ♀.**

Black: head elongate, the clypeus shining and finely punctured; the pubescence black. Thorax with rufo-fulvous pubescence above, and with black on the disk; the posterior tibiæ and tarsi obscurely ferruginous, palest beneath; the tarsi with ferruginous pubescence within; wings dark brown with a purple and violet iridescence in certain lights; the tegulæ

obscurely rufo-piceous. Abdomen: the basal segment with bright yellow pubescence, on the second and third it is black, and on the following segments it is bright ferruginous; beneath, obscurely ferruginous, and the segments fringed with rufo-fulvous pubescence.

Length $9\frac{1}{2}$ lines.

Hab. Moolaiyet. Alt. 3-6000 ft.

19. *APIS INDICA*, Fabr., Ent. Syst., Supp. p. 274.

20. *APIS FLOREA*, Fabr., Ent. Syst., II, p. 341.

21. *TRIGONA TERMINATA*, n. sp.

Worker. Black: head and thorax semiopaque, abdomen smooth and shining. The anterior margin of the clypeus, the labrum, mandibles, and basal half of the scape in front, pale ferruginous; the apical joint of the flagellum pale. The margins of the mesothorax pale ferruginous; the scutellum fringed with short fulvous pubescence, the tarsi, except the basal joints, ferruginous; wings hyaline and iridescent, the nervures and tegulæ testaceous. The base and apex of the abdomen rufo-testaceous, the former with two black spots; beneath pale rufo-testaceous.

Length $2\frac{1}{2}$ lines.

XII.—*Preliminary diagnoses of new Coleopterous Insects belonging to the families Dytiscidæ, Staphylinidæ, and Scarabæidæ obtained by the late DR. F. STOLICZKA during the 2nd mission to Yarkand under SIR DOUGLAS FORSYTH.—By D. SHARP.*

DYTISCIDÆ.

1. *Agabus dichrous.*

A. oblongo-ovalis, nitidus, subtus niger, supra testaceus, vertice nigro, rufo-bimaculato, antennis pedibusque testaceis, femoribus in medio late nigris; scutello fusco; elytris apicem versus vix fusco-nebulosis. Long. 8 mm., lat. 4 mm.

HAB. A single male individual found on the road across the Pámir from Sarikol to Panjah.

2. *Ilybius cinctus.*

I. ovalis, angustulus, parum convexus, subtus ferrugineus; supra fusco-æneus, prothoracis elytrorumque lateribus late testaceis; subnitidus, subtilissime reticulatus. Long. $8\frac{1}{2}$ mm., lat. vix $4\frac{1}{2}$ mm.

HAB. Yangihissár.

STAPHYLINIDÆ.

1. *Tachinus stoliczkæ*.

T. parvulus, sub-depressus, niger, elytris castaneis vel piceo-castaneis, antennis pedibusque sordide testaceis; prothorace fere impunctato, elytris parce punctatis, obsolete strigosulis, abdomine sat crebre sub-obsolete punctato. Long. 6 mm., lat. $1\frac{1}{2}$ mm.

HAB. On the road across the Pámir from Sarikol to Panjah.

2. *Philonthus stoliczkæ*.

P. rubido, Ex. similis et affinis: angustulus, sub-parallelus, niger, elytris rufis, antennis fuscis, basi cum pedibus testaceis, abdominis segmentis ferrugineo-marginatis; thorace angustulo, subparallelo, serie discoidali punctarum 5, et punctis lateralibus sat numerosis, elytris rufis basi summo paullo obscuriore, crebre, fere fortiter punctatis; abdomine dense, æqualiter subtiliterque punctato, opaco. Long. 5 mm.

HAB. Yárkand.

3. *Philonthus pamirensis*.

Ex. affinitate Staph. tenuis, Fabr. Angustulus, haud parallelus, niger, elytris rufis, antennis pedibusque posterioribus fuscis, illarum basi pedibusque anterioribus testaceis; abdomine subtiliter punctato. Long. 6 mm.

HAB. On the road across the Pámir from Sarikol to Panjah.

SCARABÆIDÆ.

1. *Onthophagus concolor*.

O. niger, fere nudus, supra opacus, subtus sat nitidus; prothorace peropaco, parcius subtiliter punctato, lateribus ad angulos anteriores evidenter sinuatis; elytris subtiliter striatis, interstitiis parcius et subtiliter punctatis, punctis haud perspicue setigeris. Long. 7—9 mm.

Masc. Capite vertice medio breviter tuberculato, prothorace fere mutico.

Fem. Capite medio lined curvatâ sat elevatâ, vertice medio laminâ elevatâ (ad apicem plus minusve emarginatâ) brevissimâ.

HAB. Sind valley, Káshmir; and Murree, Panjáb hills.

2. *Aphodius æger*.

A. Scarabæi granarii, Lin. similis; oblongus, leviter convexus, nitidus, niger, elytris piceis vel fere nigris, pedibus rufis, clypeo medio emarginato, fronte fere muticâ; prothorace subtiliter punctato, versus latera punctis

majoribus crebribus, margine basali integro, angulis posterioribus sinuatis; elytris vix subtiliter striatis, striis indistincte crenatis, 7° et 8° ante apicem conjunctis, humeris longius ciliatis. Long. 5—5½ mm., lat. 2½ mm.

HAB. Two small specimens were found at Yangihissár; of some others the exact locality is not recorded.

3. *Aphodius kashmirensis.*

A. niger, nitidus, sat convexus, pedibus rufo-piceis, antennis rufis, clavá fuscá; clypeo antérieur emarginato, et utrinque subacute prominulo; prothorace punctis magnis profundis sat numerosis, aliisque minutis, margine basali distincto, sulculo ante eum crenulato, elytris fortiter crenato-striatis, interstitiis subtilissime sparsim punctatis.

Long. 6—6½ mm., lat. 3½ mm.

HAB. Drás, Kargil and Leh, in Ladák.

4. *Aphodius tenuimanus.*

A. Aphodii melanosticti, Er. persimilis; oblongus, subconvexus, nitidus, infuscato-testaceus, capite thoraceque nigris, hoc lateribus testaceis; elytris luteis, maculis dorsalibus 4 vel 5, strigáque sublaterali nigris, pedibus metasternoque medio testaceis; fronte medio vix tuberculato; tibiis anterioribus tenuibus, intus conspicue ciliatis. Long. 5—6 mm.

The exact locality where Dr. Stoliczka procured the specimens is unknown.

5. *Geotrupes kashmirensis.*

G. Geotrupis stercorarii (Haroldi) persimilis, sed elytris longioribus; oblongo-ovalis, supra viridescens-niger, nitidus, subtus purpureus, fulvo-pubescent; antennis piceo-rufis; mandibulis extus rotundatis, ad apicem leviter unisinuatis; elytris striis 14, minus distincte punctatis; abdomine etiam in medio punctato, sed illo minus pubescente; tibiis posticarum cariná tertid (ab apice) omnino carente. Long. 24 mm., lat. 13 mm.

HAB. Drás, Kargil or Leh, two individuals.

6. *Hoplia concolor.*

H. oblonga, sat elongata, ferruginea, squamulis pallide griseis, magnis, fere æqualiter vestita; tarsorum posticorum unguiculo mutico. Long. 8 mm., lat. 4½ mm.

HAB. Kugíár.

7. *Serica læticula*.

S. obovata, convexa, nitidula, tantum abdomine opaco, brunneo-ferruginea; prothorace fortiter punctato, elytris seriatim punctatis, scriebus leviter depressis, interstitiis planis, tantum juxta series punctatis; antennis 10-articulatis, flabelli articulo primo apice emarginato. Long. 8½ mm., lat. 4 mm.

Locality not recorded.

8. *Lachnosterna stridulans*.*

L. testacea, capite, thorace scutelloque fere ferrugineis, supra opaca, opalescens, subtus abdomine inflato nitido, pectore minus dense villosa; capite brevi, fortiter punctato; prothorace sparsim punctato fortiter transverso, margine laterali integro, sinuato, angulis posterioribus obtusis; elytris sat crebre parum profunde punctatis. Long. 15½ mm., lat. 8 mm..

HAB. Murree, a single individual.

9. *Lachnosterna stoliczkæ*.

L. oblonga, picea, nitida, pectore prosternoque griseo-villosis; capite haud parvo, clypeo fortiter reflexo-marginato, anterieus rix emarginato; prothorace lateribus rotundatis, anterieus quam posterius magis angustato, crebrius punctato, angulis posterioribus obtusis, margine laterali serrato; elytris crebrius fortiter punctatis, areis longitudinalibus parcius punctatis, haud argute elevatis. Long. 15—16 mm., lat. 8 mm.

HAB. Murree.

* I am acquainted with only one other species closely allied to this, it is as yet undescribed and is labelled in my collection "*Ancylonycha pulvinosa*, Reiche, India bor;" it has the same appearance as *L. stridulans*, and has, like it, the epipleural line finely crenulate, but it differs considerably in the structure of the antennæ and of the claws; in *Lachnosterna stridulans*, the flabellum of the antenna is rather long, and composed of five joints, the first is, however, very short, not half the length of the second, which itself is a good deal shorter than the three following ones; the claws are divided into two rather divergent portions of equal length. In the undescribed Reicheian species the flabellum is short and composed only of three joints, and the claws of the feet are strongly dentate in the middle.

I add a short diagnosis of this insect.

LACHNOSTERNA PULVINOSA, n. sp. *Ferruginea, elytris dilutioribus, supra opaca, opalescens, subtus abdomine inflato, medio nitido, pectore parcius villosa; capite brevi dense rugoso-punctato; prothorace sparsim punctato, punctis in margine anteriori magnis, fortiter transverso, lateribus valde sinuatis, in medio per dilatatis, angulis posterioribus valde obtusis, margine laterali subcrenulado; elytris sat crebre subtiliter punctatis. Long. 16 mm.*

10. *Rhizotrogus bilobus*.

R. antennis 10-articulatis; oblongus, colore variabilis, ferrugineus vel piceus, subopacus, prothorace in medio sæpius nitido, ad latera albido-pruinoso; clypeo in medio profunde emarginato; prothoracis lateribus antèrius crenulatis; elytris indistinctis et inequaliter punctatis, lateribus dense ciliatis; pygidio ventrequè pruinosis; pectore prosternoque dense villosis.

Long. $17\frac{1}{2}$ —20 mm., lat. 9—10 mm.

HAB. Yangihissár and Kugiár, Eastern Turkestan.

11. *Anomala stoliczkae*.

(Genus *Callistethus*, Blanch.) *A. ovata, minus convexa, lætissime viridis, nitidissima; elytris subopacis, antennis nigris; capite thoraceque lævigatis; elytris seriebus duplicatis punctorum tribus, et inter eas sat crebre punctatis.* Long. $12\frac{1}{2}$ mm., lat. $6\frac{1}{2}$ mm.

HAB. A single individual was found at Murree.

12. *Adoretus nudiusculus*.

A. testaceus, clypeo ferrugineo, fronte fusca, nitidula, parcius brevissimè setosus; prothorace fortiter punctato, lateribus subcrenulatis, angulis posterioribus omnino rotundatis; elytris obsolete costatis, fortiter punctatis.

Long. $9\frac{1}{2}$ mm., lat. $5\frac{1}{2}$ mm.

HAB. Jhelum valley, a single individual.

13. *Adoretus simplex*.

A. angustulus, parallelus, sat elongatus, densius albido-setosus, subopacus, subtilius parcius setosus, nitidus; clypeo rotundato, in medio alte reflexo; prothorace basi æqualiter et tenuiter marginato, angulis posterioribus rotundatis; elytris obsolete costatis, crebrius punctatis.

Long. 10 mm., lat. $4\frac{1}{2}$ mm.

HAB. Jhelum valley.

14. *Pentodon truncatus*.

P. nigro-piceus, nitidus, capite antèrius truncato, angulis inter se distantibus, tuberculo longitudinali acuto, fronte in medio tuberculis duobus minutis; prothorace fortiter punctato, basi ad angulos posteriores tenuiter marginato. Elytris sat crebre haud profunde punctatis, seriebus duplicatis haud distinctis. Long. 19—20 mm., lat. 12 mm.

HAB. Kugiár. Two individuals, which are no doubt both males.

15. *Pentodon pumilus.*

P. nigro-piceus, nitidus, capite antèrius truncato, angulis inter se distantibus, tuberculo longitudinali acuto, fronte in medio tuberculis duobus minutis; prothorace fortiter punctato, basi ad angulos posteriores tenuiter marginato; elytris fere dense, subrugulose punctatis, scriebus duplicatis haud distinctis.

Long. $14\frac{1}{2}$ — $15\frac{1}{2}$ mm., lat. 9—10.

HAB. Kugiár.

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Part II.—PHYSICAL SCIENCE.

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#### No. IV.—1878.

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XIII.—*Description of a new Lepidopterous Insect belonging to the genus*
Thaumantis.—By J. WOOD-MASON.

(With Plate XII.)

Besides the fine and beautiful insect described below, there are represented in the Zoological collections formed by Mr. Ossian Limborg and staff in Upper Tenasserim during the months of December, 1876 and January, February, March, and April 1877, 225 other species of *Lepidoptera*, partly butterflies, 50 to 60 of which are considered to be undescribed, and several of which are referred to new genera, by Mr. F. Moore, who has worked out the whole collection and written a paper upon it which will shortly be published and illustrated by three or four coloured plates in the Proceedings of the Zoological Society of London.

LEPIDOPTERA.

Fam. MORPHIDÆ.

THAUMANTIS LOUISA.

Th. louisa, Wood-Mason, P. A. S. B., July 1877, p. 163.

♂ *Th. alis supra albis, anticis dimidio basali, posticis partibus duabus basalibus latissime et purissime fulvis; singulis, ut in Th. howqua, fasciâ submarginali lunularum cum maculis hastiformibus coalitarum saturatissime violaceo-fusca, ornatis; lunulis maculisque alarum posticarum valde majoribus: alis infra luteo-fulvis, anticarum parte media sola alba luteo vix tincta; strigis quatuor sinuatis, duabus basalibus saturate brunneis, alterisque duabus submarginalibus obsoletis et tantum ad angulum analem brunneo-coloratis; anticarum ocellis omnibus (5) obsoletis, posticarum au-*

tem duobus (intermediis tribus obsoletis) rufis, pupilla alba, iride tenax nigra.

Expans. alarum antio. unc. 5 lin. 3.

Habitat in Tenasserim in montibus "Tuoo," dictis ad alt. 3—6000 ped.; O. Limborg detexit.

This fine and distinct species belongs to the same division of the genus as *Th. camadeva*, *Th. nourmahal*, *Th. cambodia*, and *Th. howqua*, to the last of which it is most nearly related, but from which it differs in having the upper surface of the wings white and fulvous instead of fulvous throughout, and in having five spots, the red rings of the ocelli, on the under-surface of the fore wings, and only two well-developed ocelli on the hinder wings, instead of three and five ocelli respectively.

Both the specimens obtained are males and each is furnished, like the same are in all the allied species and in some at least of those belonging to the other section of the genus, with a tuft of erectile hairs situated on the upper surface of each hinder wing near the base of the organ. Dr. Fritz Müller has recently communicated to the Entomological Society of London a valuable paper in which the tufts of hairs and the glandular patches he has discovered on different parts of the body in the males of many Brazilian *Lepidoptera* are considered to be odoriferous organs serving, in all probability, to attract the females. In the species of *Thaumantis* the tufts by their erection probably serve to scatter a scented secretion poured out by skin-glands at their base; and I hope that some one of the three gentlemen (Major Badgley and Messrs. Peal and Mandelli) who are located in districts in or near to which two of the species* (*Th. camadeva* and *Th. diorea*) abound, will before long examine living specimens of the male of one or the other of these species so as to be able to tell us whether these structures are odoriferous or not. The accompanying plate is from a characteristic coloured drawing of the typical specimen (presented by me to the Oxford Museum) by Professor Westwood, Hope Professor of Zoology in the University of Oxford.

* Short descriptions, by the aid of which and of that of the accompanying illustration any one ought to be able to recognize these two species, are subjoined:—

Th. camadeva, has the fore wings above white tinged with leaden blue, brown at the base, and with a submarginal band of blotches and another of lunules fuscous; the hinder wings fuscous brown at base and with a band of leaden white lunules behind the middle; and five red ocelli, each provided with a black iris-like ring, on the under surface of each of the four wings. The expanse of the fore wings is $4\frac{1}{2}$ inches. The species is well-figured by Westwood in his 'Cabinet of Oriental Entomology,' pl. iv.

Th. diorea belongs to the other section of the genus: it is to be recognized at a glance by the fuscous black upper surface of its wings, each of which has in the centre a huge band or spot of indescribably brilliant metallic changeable blue; on the fore wings this spot is much paler and less changeable externally, while on the hinder wings it is paler in the centre. Expanse $3\frac{1}{2}$ — $4\frac{1}{2}$ inches.

XIV.—*Great Snow-fall in Kashmir.*—By R. LYDEKKER, B. A.

Among the inhabitants of the Kashmir Himalaya, the winter and spring of 1877-78 will long be memorable on account of the enormous quantity of snow which then fell on their mountains and valleys, and still more on account of the grievous famine which followed this excessive snow-fall. So excessive indeed was this snow-fall, that no tradition or record exists even among the oldest inhabitants of anything approaching to such a fall. I have therefore thought that a short account of this abnormal snow-fall, and of the destruction inflicted by it on the indigenous animal life, might be thought not unworthy of a place in the records of the Asiatic Society, and have accordingly put together the following notes :

Early in the month of October 1877, snow commenced to fall in the valley and mountains of Kashmir, and from that time up to May 1878, there seems to have been an almost incessant snow-fall on the higher mountains and valleys ; the inhabitants have indeed informed me that in places it frequently snowed without intermission for upwards of ten days at a time. It is extremely difficult to obtain from the natives any correct estimate as to the amount of snow which fell in any place ; but at Dras, which has an elevation of about 10,000 feet, I estimated the snow-fall from the native account as having been from 30 to 40 feet thick on the level.

The effects of this enormous snow-fall are to be seen throughout the country. At Dras, the well-built travellers' bungalow, which had stood, I believe, some thirty years, was entirely crushed down by the weight of the snow which fell on it. In almost every village in the neighbouring mountains more or less of the log-houses have likewise fallen ; while at Gulmarg and Sonamarg, where no attempt was made to remove the snow, almost all of the huts of the European visitors have been utterly broken down by the snow.

In the higher mountains, whole hill-sides have been denuded of vegetation and soil by the enormous avalanches which have swept down them, leaving vast gaps in the primeval forests and choking the valleys below with the debris of rocks and trees.

As an instance of the amount of snow which must have fallen on the higher levels, we will take the Zogi-pass, leading from Kashmir to Dras, which has an elevation of 11,800 feet. I crossed this pass early in August last, and I then found that the whole of the ravine leading up to the pass from the Kashmir side was still filled with snow, which I estimated in places to be at least 150 feet thick. The road at that time was carried over the snow up the middle of the ravine ; the true road which runs along one bank of the ravine being still entirely concealed by snow. It seemed to me

quite impossible that even half the amount of snow then remaining could be melted during the summer.

I heard subsequently from a traveller who crossed the pass on the 5th of September, that the road was then just beginning to get clear from snow, and that some of his loads were carried along it, while others were taken over the snow in the ravine.

In ordinary seasons this road on the Zogi-pass is clear from snow some time during the month of June; if we refer to page 223 of Mr. Drew's "*Jammoo and Kashmir Territories*," we shall find that in speaking of this pass, he says, "About the beginning of June the snow-bed breaks up, and the ravine is no longer passable."

It is thus apparent that the road across the Zogi-la was not clear of snow during the past summer until three months later than it is in normal seasons, while the ravine early in September was still filled with snow. I crossed the same pass in August 1874, and at that time there was not the slightest trace of snow to be seen anywhere on the pass, or in the ravine leading up to it. As another instance of the great snow-fall, I will take the valley leading from the town of Dras up to the pass separating that place from the valley of the Kishenganga river. About the middle of August, almost the whole of the first-mentioned valley, at an elevation of 12,000 feet, was completely choked with snow, which in places was at least 200 feet in thickness. In the same district all passes over 13,000 feet were still deep in snow at the same season of the year. In ordinary seasons the passes in this district which are not more than 15,000 feet in height are completely cleared of snow at the beginning of August, except in a few sheltered ravines. During last summer, however, it was quite impossible, that the snow could have even melted on the passes.

Traces of this great snow-fall were even to be observed in the outer hills in September, since at the end of that month, I saw a patch of snow resting in a hollow of the Haji Pir ridge above Uri, which is only a little over 9,000 feet in height. The Thakadar of this place told me that he had never before seen snow there after the beginning of June.

It is almost unnecessary to point out, that if a snow-fall similar to the above were to be of constant occurrence in the Himalaya, the permanent snow-line would lie at a much lower level than it does at present, and that the glaciers would greatly increase in size, and descend much lower into the valleys.

In conclusion, it remains to notice the destruction of animal life caused by this unusual snow-fall. In the upper Wardwan valley I was told by some European travellers that they had several times seen numbers of Ibex embedded in the snow; in one place upwards of sixty heads were counted, and in another the number of carcasses was estimated by my informant as

little short of one hundred. I myself twice saw some fifteen carcasses of small Ibex embedded in the snow-drifts of the Tilail valley.

The most convincing proof, however, of the havoc caused among the wild animals by the great snow-fall, is the fact that scarcely any Ibex were seen during last summer, in those portions of the Wardwan and Tilail valleys, which are ordinarily considered as sure finds. Near saline springs in the latter valley, Ibex are always to be found in the later summer, but this year I only heard of one solitary buck, probably the sole survivor of a herd, having been seen at these salt-licks. The native shikaris say that almost all the Ibex have either been killed by the snow, or have migrated into Skardo where the snow-fall was less.

The Red-Bear (*Ursus isabellinus*) was also far less numerous during the past summer than in ordinary seasons, and the shikaris say that numbers of them have perished, owing to their winter quarters having been snowed up so long that the occupants perished from hunger.

The same explanation will probably account for the fact that in the higher regions I found many of the marmot burrows deserted.

Much has been said lately as to the destruction inflicted on the game of the Kashmir Himalaya by the rifle of the European sportsmen, but I think that the destruction caused by the snow of the past winter has far exceeded any slaughter which would be inflicted by sportsmen during a period of at least five or six years.

XV.—*Physiographical Notes &c. on Tanjore (Tanjá-úr).*—By LIEUTENANT-COLONEL B. R. BRANFILL, *Deputy Superintendent, Great Trigonometrical Branch, Survey of India*,—Communicated by COLONEL J. T. WALKER, C. B., R. E., *Surveyor-General of India*.

The Tanjore district of the Madras Presidency is nearly contained within an equilateral triangle of 75 to 80 miles on each side, on the Coromandel coast (Chóramandal = Chólan's region) immediately south of the river Kolladám (*Anglice* "Coleroon"), which is the north and north-west boundary, running S. W. by W. 75 miles inland from the river mouth. The Bay of Bengal forms the east side, running from the same point nearly 75 miles due south to Point Calimere (Kalliméd). The third side is an irregular line of much the same length from Point Calimere to the "Cauvery" (Kávéri and Kolladám) 10 miles east of Trichinopoly (Trisirápalli). This triangular area contains about 3,000 square miles, two thirds of which is Kávéri delta, and two thirds of this portion, or about 1,400 square miles

is irrigated, and there is scarcely another acre of it that could be profitably brought under irrigation. In addition to this, some 650 square miles of undulating country, running 40 miles to the southward along the shore of Palk's Bay to the Pámbanár, the border of Shivagangai Zamindári estate (Madura District), and extending 12 to 20 miles inland, also belongs to Tanjore. But the scope of these notes does not embrace more than the deltaic portion of Tanjore, the country to the south having been traversed the previous season, and reported on.

Although there are several places named "hill" (*malai*), or "mound" (*médu*), there is nothing at all worthy to be called a hill, except the *dunes* or sand hillocks along the sea-board, the height of which (at Negapatam) barely attains an elevation of 50 feet above sea level, and a few insignificant sand-drifts in the E. N. E. corner of the delta, near the mouth of the Kolladam river.

The whole delta consists of an even plain of alluvial deposit containing a comparatively large proportion of sand and having a good slope of 3 or 4 feet per mile. The fall, however, decreases as the coast is neared to 2 feet per mile or less. The following particulars of slope are from the railway levels of the South India Railway, according to which the bed of the Kávéri for nearly one hundred miles, from Karúr to within 30 miles of the present coast line, has a pretty even fall of near 4 feet a mile. The next 10 miles the gradient decreases to about 3 feet per mile, and the next to within 10 miles of the coast to 2 feet per mile.

Continuing the examination of the declivity (by means of the recent Government Hydrographic or Marine Charts), the fall of the ground out at sea beyond the coast line increases in the first fourteen miles to 5 or 6 feet per mile, to 8 or 9 feet per mile for the next nine miles, to 24 feet per mile for the next six, and to 38 feet per mile for the last ten miles examined up to 37 miles from the coast. This rapid deepening of the sea is a noticeable fact, but it seems only natural if the present coast line is of purely fluvial formation.

The character of the alluvium alters and generally deteriorates in fertility as the distance from the head sluices of the Kávéri channels increases. It varies from a rich red or black loam to a pale sandy clay, the sand increasing and the clay diminishing from west to east, and but for the annual fertilizing floods would be anything but rich and productive. Without artificial manure the land usually bears but one crop yearly.

The sea-board flats are usually well raised above sea-level, and further protected from high tides and storm waves by a high sand-ridge along the coast. Cyclones have been frequent on the coast, but have not made the great devastating inroads they appear to have made elsewhere on the coast. The formation of this coast-ridge or sea-wall appears to be

explained by the strong sea breezes which prevail in the hot and dry season, and, blowing strongest at the hottest part of the day, when the sand of the sea beach is driest and most easily raised, continually drift it up inland to accumulate under the shelter of the coast vegetation.

It is thus formed into a ridge, or line of hillocks, parallel to the shore-line at the inner and upper edge of the beach, frequently standing at a steep slope on both sea-ward and land-ward sides. The blown sand does not appear to extend far inland, being kept down by the fringe of palms and other vegetation that usually grows near the coast. This advanced vegetation equally protects the sand-ridge from being blown down again and out to sea in the violent westerly winds of the south-west monsoon.

This coast sand-ridge is a common feature on the coasts of Southern India, and it seems likely that the devastating storm-waves which have visited the coast have only or chiefly destroyed the towns and villages that were unprotected by it, such as those most conveniently situated for trade at the mouth of a river or inlet, and those opposite to a muddy coast line where there is no sand that will drift. In such places (in the number of which Madras may be included), it would be prudent to raise an artificial wall or 'levée'; a small price to pay for immunity from such a calamity as befel Masulipatam in 1864, when many thousands of persons* perished miserably, and such as has probably swept out of existence many a flourishing port on the Coromandel Coast.

As to whether the coast line of the Kávéri delta is altering, it may be well to consider the elements of change at work. We notice first the silt-bearing floods of the autumnal rains, which are doubtless yearly raising the level of the land generally and tending to make it encroach on the sea, extending the coast line eastwards and shoaling the sea-bed, a slow but unceasing process, albeit the effects may seem to wax and wane and even to contradict what must inevitably occur sooner or later. The process of new land-formation may be much slower now than it was before the great irrigation works were begun, but so long as fresh silt is brought down by the annual floods, it cannot cease altogether. The heaviest grains are dropped first as the current slackens, whilst the lightest are carried on until the river current is lost in the quiet depths of the open sea.

The next element of change is the wind, which acts both directly and indirectly and in various ways. First, there is the north-east monsoon (wind), acting indirectly by means of the southward, long-shore current which carries the silt-bearing floods more or less down the coast, and so to deposit their heaviest burden to the south of the river outlets, thus commencing the sand-banks which help to shift the river mouth northwards. This wind cannot act directly on the shore sand to the north of

* 30,000 persons are stated to have perished in one night.

the river mouths, because the sand is then moist from the recent autumnal rains, the heaviest rain of the year, and therefore unmoved. But the southward set of the rollers and beat of the surf must tend to drift the shore-sand loosened by its violence, southward across the river mouths, which it shoals, helping to form the bar of sand-banks and islands usually formed in such situations.

In January and February the north-east monsoon (wind) gradually changes into land and sea breezes, which increase as the spring advances with clear weather and a hotter sun. The sand of the sea-shore rapidly dries and is drifted by the sea-breezes to the top of its slope, as long as there is loose sand to drift and nothing to shelter it.

The sea-breezes veer gradually to the south-east and southward until in May they become strong '*long-shore*' winds from the south, directly transporting northward much of the blown sand collected along the coast-ridge, in clouds of dust which settles in the hollows and tends to fill up and choke the southern edges of the river out-falls and so to shift them northwards.

With the change of wind from the north-east in January to south-east and south in April and May, the '*long-shore*' current changes from south to north, latterly running rapidly northwards and bringing in the heavy sea-rollers obliquely to the coast from the south-east, to dash in lines of roaring surf on the shore, washing the sand of the beach northwards at every stroke. This double action it is (perhaps chiefly) that drives the river mouths northwards.

Whether this is the right explanation or not, the fact remains that the mouths of the rivers of the Coromandel Coast are continually shifting northwards.

This is seen best in the Mahánadi and Kávéri; also in the Pennér (Pináka), Nagari river, Kordaliyár, Kú-am, Pálár and Vaigai.

It is less noticeable in the Gódávéri, Vellár, and Támráparani. The Kistna seems to contradict this tendency, and the Gódávéri also has one outlet apparently to the south of its delta, but these apparent exceptions probably admit of some explanation. On the west coast, the Nétrávati exhibits a similar tendency to make its outlet into the sea considerably north of the spot it seems to be going to, as it approaches the coast. The northward shifting of the Nétrávati mouth is probably due to the northward set of the current, and the violent beat of the breakers during the south-west monsoon, which has nothing to counter-balance it. It seems probable that where the beach is sandy, the same tendency of the river-mouths to shift northwards may be observed in Ceylon.

After shifting for an indefinite period to the north, during which it seems probable that the bed of the river must be silting up, especially

near the outfall where the current is less, some unusually high flood may be expected to top the bank and thus form a new outlet to the south. This may possibly occur near the head of the delta, and the new channel may take its course along the southern edge or border and recommence the process of shifting its mouth northward again. This may be the explanation of the Kistna apparently flowing along the southern border of its delta; it also points to a possibility of the Kávéri doing the same thing some day.

When a river has opened a new mouth and abandoned the whole or a portion of its course, especially that which ran parallel to the coast, it seems only likely that a lagoon or *back-water* will be formed, which will sooner or later silt up and eventually be reclaimed entirely from the sea.

Having thus considered the causes of the northward shifting of the river mouths on the Coromandel Coast, to which the Kávéri has been subject continually during the formation of its delta, to the east of Trichinopoly, the probable history of its more recent inland course offers itself for consideration.

Dr. Burnell of the Madras Civil Service states he has met with no mention of the Kolladam (Coleroon), which is now the principal bed of the lower Kávéri, by the early geographers, and thinks that the channel which passes by Kumbakónam and Máyaveram and enters the sea at Kávéri-paṭṭanam, having retained the name of Kávéri throughout its course, was the main channel of the river till the 10th or 12th century.

From Ptolemy's map of the Coast of India, it would appear that 1,500 to 2,000 years ago, there was a spit of land jutting out into the sea at the Kávéri mouth near "*Chaberis Emporium*" (Kávéri-paṭṭanam), of which there is now no trace, either above or below the sea-level contour line.

Such a spit or shoal would, however, naturally disappear if the river mouth shifted, or if any thing stopped the deposition of silt which formed it, and this must have happened when the great irrigation works at the head of the delta were constructed.

At present the Kávéri-paṭṭanam mouth of the Kávéri is nearly silted up, and the principal outlet of the surplus flood-water is now by the mouth of the Kolladam, where, according to recent maps, a new deltaic projection and shoal are forming.

The great irrigation works are supposed to have been constructed in the 10th and 12th centuries, but local traditions represent them as early as the year 200 A. D. In any case, the delta has been under irrigation from time immemorial. The story of the Kávéri main channel would seem to be somewhat thus:—After some long period of silting up from the deposit left by the annual floods, the river in some unusual inundation must have overflowed its banks and found a new and easier course.

This diversion may have occurred either above or below what is now the island of Srīrangam, lying like a sand-bank in mid-river. If it occurred above, it seems likely that the new channel or northern branch (the Kollaḍam*), soon became the deeper bed of the two, and then either approached and threatened, or actually breached the north bank of the southern or old Kávéri branch below the island, and the 'grand anaikaṭ' (dam or weir), which is strictly a river-wall or 'levée', must have been built to prevent or repair a breach.

If, on the other hand, the breach or bifurcation occurred below Srīrangam, the 'grand anaikaṭ' was probably made to repair it and keep the stream back in its own channel: but if so, the attempt was ineffectual, for the river must have then formed a new bed for itself, some miles higher up the channel, at a point nearly opposite a place marked on the map (Indian Atlas, Sheet 79) as 'Palaya Cauvery' (Old Cauvery).

In either case, the northern channel, which flows along the left or northern border of the delta, and immediately under the gravel up-lands of north-east Trichinopoly, became the deeper and wider one, carrying off the high floods, whilst the south or old Kávéri branch, kept at a higher level with impeded stream and checked by numerous irrigation works, gradually silted up and threatened to leave Tanjore unwatered, for the bed of the Kollaḍam was too deep to admit of irrigation channels being profitably led from it. The difference of level of the two beds at the grand anaikaṭ is variously stated to have been from 10 feet to 20 feet early in this (19th) century and to be rapidly increasing.

In this state, the British Government took charge of the district and, after trying many other expedients to save and restore the Kávéri irrigation, in 1836 constructed first the upper anaikaṭ, a weir or dam across the head of the northern branch or Kollaḍam, in order to raise the stream, so as to flow into the Kávéri Proper or southern branch. This proved more than sufficient in times of high floods, and there was danger of overwhelming Tanjore by a sudden inundation from pouring in an excessive supply. To remedy this, sluices were formed in the 'grand anaikaṭ' to provide an escape for the sand and surplus water that was not wanted, and finally a head-sluice or regulating dam was made across the Kávéri channel where it enters the delta, below the 'grand anaikaṭ,' thus giving the means of regulating the supply as desired.

The Kávéri proper continues its course through the delta with a

* ? Kolai-(y)-iḍam = 'Slaughter place', from a legend that men were cast into a chasm through which the Kávéri had disappeared, in order to fill it up; a story that looks as if a human sacrifice had been performed at the repair or filling up of a great breach. Kolláyi = a breach in a bank (Gundert). Another suggests Kilai-y-iḍam = 'bifurcation-place', from kilai, a branch, bifurcation &c.

continually diminished stream, giving off numerous supply channels all the way to the Coast, when little stream remains to enter the sea at Kávéri-paṭṭanam or Kilúr ('*East-bourne*').

There is no projection beyond the normal (north and south) line of the coast here, nor any spit or shoal to witness to any old projection of the river mouth, nor do the Marine Chart soundings indicate anything of the kind. That the diminished stream flows in its old bed, is proved by the name of the channel and the port at its outlet, and also by the traditions at the places on its course, Kumbakónam, Máyaveram &c., where the sanctity of the Kávéri water is still highly esteemed.

The other and now chief branch, the Kollaḍam, takes a north-easterly course, keeping more and more to the northward along the low ground that probably existed on the north edge of the Kávéri delta, and has, by its rapidity and volume, made for itself a deep and wide bed, too deep below the surface of the country to allow of irrigation channels being led from it, and in most places three-quarters of a mile in width. To utilize the surplus water escaping to the sea by this channel, the 'Coleroon lower anaikaṭ'* was built, to supply the Máyaveram and Shi-yáli Táluks of N. E. Tanjore, and the Chidambaram ('Chilambram') Táluk of South Arcot.

The water overflowing the final anaikaṭ flows with a greatly retarded current and in a very tortuous course along the last few miles before it enters the sea near Dívu-kóṭai ('*Isle-fort*', the "Devikotta" of Atlas Sheet No. 79), the name of which indicates, that it was on an island when first named (tívu being the Tamil form of the Sanskrit dvípa, *an island*).

Notwithstanding published statements to the contrary, it appears that sand-banks are still forming at the mouth of the Kollaḍam, and the Marine Chart of the coast gives the position of a shoal called the "Coleroon shoal," whence Porto Novo, or Muhammad (? Mahmúd) Bandar, seems likely to be left far inland in course of time.

The direction of the Kollaḍam bed being more north and south than that of the so called S. W. monsoon wind—of which fact, there is ample proof in the permanent eastward set of the stems, twigs and branches of the trees exposed to it—the fine blown sand of the river bed in the dry and hot season (April and May), is drifted up into heaps and lines along the southern or right bank of the river, tending to form a natural river wall there and to keep the stream nearer to the northern bank.

The Kávéri delta is only about 10 miles in width at Tanjore and it is flanked by comparatively high ground, composed of previous sedimentary formation, stratified beds of laterite, conglomerate and mottled grit, with quartz pebbles mixed, through which the river first cut its way, whilst depositing the material of its present delta.

* Locally "Anaikarai" or Dam-bank.

There are some 50 or 60 different river channels, by which the Kávéri water is distributed for irrigation, or for drainage over the whole extent of the delta, the names of which being mostly derived from those of reigning princes, should throw some light upon the history of the country, for there are representatives of the old Pándiyan and Chólan dynasties, who reigned before the 16th century, as well as of the Telugu Nayakans who superseded them, and possibly also of the Mahrattas whom the British Government succeeded. There are thirteen tidal mouths of the Kávéri that enter the sea and are more or less navigable for small boats.

There has been little change in the principal river channels of late years, due in a great measure to the conservative measures adopted under the British Government, and to the great regulating works, constructed for keeping the floods under control. There must be a tendency for the channels to silt up, as well as for the whole of the irrigated part of the delta to rise, but there seems to be no apprehension at present of danger to the province from this source.

Near the coast, and more particularly at the south-east corner of the delta, towards Point Calimere (Kalliméd), there are extensive salt-swamps, with patches of jungle and desert.

The Kódikarai salt-marsh covers nearly 100 square miles, being about 20 miles long east and west, and 5 miles wide north and south. It is used as a vast salt-pan under Government supervision. The two highest spring tides of May and June (called by the natives 'Chittrai Parvam', '*full-moon of April and May*', and Visákha Vellam, '*May—June flood*') overflow the sea-wall and fill the swamp with brine, which is, in favourable seasons, soon crystallized under the evaporation from the sun and the dry west winds. The south-east and southerly breezes that prevail in May, probably combine to make the spring tides of this season unusually high.

A considerable degree of sanctity is locally attributed to Védáran-yam, ('*Véda-forest*') and to Kódikarai ('*Promontory-shore*') from a tradition that here, as subsequently, at the Rámésvaram promontory, the mythic hero Ráma tried to make a causeway to Lanka, Ceylon. There is now daily postal communication by open boat, between India and Ceylon at this place.

An impression exists that this sea, Palks Straits and Bay, is silting up, but this process must be exceedingly slow, inasmuch as no large rivers now discharge any large proportion of their silt into this receptacle. The Vaigai (? Veghavati) outlet scarcely ever discharges, and as more irrigation works are introduced, this proportion must diminish.

Still this is to a great extent an inland sea surrounded by a sandy shore from which the land-breezes and strong southerly and westerly winds must bear some drift to deposit. Moreover, the northward beat of the surf

along the north-east Coast of Ceylon from April to September, and the southward beat along the east Coast of Tanjore from November to January, must tend more or less to shoal the entrance to Palk's Bay from the Bay of Bengal.

This sea was known to the old geographers as *Sinus Argaricus* (Colonel Yule's map of ancient India has *Sinus Argalicus* for Palk's Bay, and a town marked at the mouth of the Vaigai named "Argari? Argalu? Marallo? (Maravár)"; I would venture to suggest that the sea may very likely have been so named from *Anaikarai*, *The barrier, cross-bank* or *dam-bank*, by which term the great natural 'bund' or causeway, Adam's bridge, between India and Ceylon was probably known. The early Arabian voyagers knew it as (and thence called the country beyond it) 'Ma,abar', i. e., *The ford, ferry* or *passage*. I understand, however, that the name appears in Ptolemy as *Ανχειρουπόλις* (? *Anakarai-town*) from which the Bay may have been called, and, if so, this town may have been the old town now called Attankarai (from *Aru a river*, and *Karai a bank, shore*) situated at the old mouth of the Vaigai river.

It is an interesting question whether the line of sand-banks and islets forming 'Adam's bridge', between Rámésvaram and Mannár, is undergoing any permanent change. I could learn nothing reliable on the subject when I was there in 1874, '75, and '76, but it can scarcely be at a perfect stand-still. On the one hand, there appear to be traditions that at one time it was possible to walk across at low water dry shod, but I could not learn that this had actually occurred within modern historic times. On the other hand, it would appear that there was a considerable trade carried on between Arabia and China through these Straits, and one would hardly suppose that it could have been carried on in such small vessels as can alone have passed through the passages in "Adam's bridge" previous to the excavation of the Pámban channel by the British Government, unless there were passages that have silted up since. Dr. Burnell tells me, he has a reliable Portuguese MS. of 1685, by a Captain J. Ribeiro, stating that there was then "no passage, except two narrow canals, one by Ramanacor and the other by Manar"; and that "a small 'sumaca' only can pass by either at high water."

At the present time, there is a single channel at Mannár answering this description, and none elsewhere, except the new passage at Pámban, which has been cut artificially through the rocky reef at a place where in quite recent times, the old built-stone causeway had been breached by storm-waves (in 1484 and since) which also destroyed the adjacent town on the spit of land west of Pámban between Tóni-turai and Vettilai Mandapam.

The surf beats heavily all along "Adam's bridge" during both mon-

soons, and a strong current sets constantly the same way as the wind; at other times the current varies with the tide, and one would suppose that no sand-banks could withstand the violence of the wash over them at every change of tide. Still the islets and sand-banks do remain as a whole, albeit probably in a state of frequent change individually. But the growth of coral is active here, and new islets are said to be forming where there were none, and old ones increasing.

The blown sand too, seems to have some effective element of conglomeration in it, by which sand-stone is forming constantly. If, however, the available waterway is curtailed by new islets and sand-banks, it would appear likely, that the passage between them must probably become deeper by the increased violence of the water that has to pass. It seems therefore likely, that the land may gain superficially on the sea in Palk's Straits, but equally so that some of the channels may remain as deep as hitherto, or possibly become even deeper for an indefinite time to come.

Tanjore appears to have been occupied from very early times by Tamil people, over whom the Chólan or Sóran dynasty held sway for many centuries prior to the 16th century, and their country was known as the "Chóramandalam" (whence Coromandel).

The Chólan capital was at different times at Kánchipuram (Conjevoram); at U'raiyúr, near Trichinopoly; at Tanjore; at Kumbakónam and other places.

The Telugu Nayaks succeeded the Chólan kingdom and ruled in Tanjore for more than a century up to 1675, when the Mahratta princes superseded them, and ruled till they were superseded by the British Government.

The Chólan rulers seem to have done most good for the country by elaborating the extensive system of irrigation, to which the present Government has added little but restorative, conservative and regulating works, of the greatest value no doubt, but no fresh channels have been made. They also built many of the great Hindu Temples, of which there are no less than 3,000 in Tanjore, and their endowments still remain, but the management of many of these is in a deplorable state of neglect, and the temples fast going to ruin. Witness Tirupálturai, Gangaikandapuram, Mannárguḍi and others.

The Nayakan rulers also have left their mark on the country in the numerous Mandapams (open temple halls), Chattrams, (native alms, and rest-houses) and many other buildings, showing their peculiar Indo-Moorish style of architecture, having vaulted roofs and pointed arches, the best specimen of which that I have seen is the palace of Tirumala Nayak at Madura, built about 1650.

A very noticeable fact in the Tanjore delta is the comparative scarcity of forts and fortified towns. The inhabitants appear to me to be

unusually and seriously industrious, and to have a smaller admixture of the warlike classes than any of the South-Indian districts I have passed through. They have been habituated to agriculture for so long that the vice of war has died out, and the people seem too busy and well off to revive it.

The Nayaks do not seem to have introduced many immigrants of Telugu race; the neighbouring warlike tribes of Kallans and Maravans are also absent from the deltaic part of the country, and the pastoral tribes are only found in the more forested tracts beyond the delta.

It is stated that with the exception of a short experience of Muhammadan rule under Haidar 'Ali (in 1780), there is no record of the country having suffered from famine, although food prices have risen very high during the prevalence of famine in adjacent districts.

There is one patent reason for the country not having been harassed by fire and sword, which is, that it was impassable for troops, or could be easily made so, for half the year or more, and *that* in the cool and fine season of autumn and winter, when the rice-fields are all under water. Besides this, there were no made roads in the delta fit for wheeled traffic, except in the dry season. Pack cattle are much used even now.

The irrigated part of the country is now well supplied with raised roads, but even these for the most part are almost useless for any large amount of wheel traffic in the wet season, because they are unmetalled, or only metalled with the ordinary river sand from the channels: and it appears marvellous how a thriving population can be content to pass several months confined to their villages as it were in islands, surrounded by a sea of deep mud, with only doubtful pathways for communication along the narrow and irregular banks dividing the rice-fields. The river channels, when in flood, are not commonly used for communication or traffic. The British Government made some of the channels navigable by means of locks &c., but these have become completely disused, and replaced by railways.

The climate of the Kávéri delta is mild and moist, compared with that of the adjacent districts, due no doubt to its situation on the coast and the great spread of irrigation water. The annual course of the weather is somewhat thus:—

During January the weather is cool and fine with fresh north-east breezes.

In February the wind is lighter and more easterly. Heavy fogs are common night and morning, succeeded by hot days. The rice crop is cut and the country quickly drains dry.

In March, April and May the wind is variable. Near the coast, land and sea-breezes prevail. The hot weather sets in, fields become bare and parched, and the heat increases greatly. Latterly, southerly and south-westerly winds set in, and occasional thunder-storms occur to clear and

cool the air, and an occasional partial 'fresh' comes down the Kávéri channels.

In June, strong westerly winds prevail with much dust and dry heat.

In July, August and September, the river channels fill from the south-west monsoon rain on the western gháts, also from occasional local falls of rain. Early rice cultivation begins, and the westerly winds gradually fall, to be succeeded by calms and variable winds.

In October and November, the wind sets in from the north-east, and heavy falls of rain occur, the temperature falls considerably, and rice cultivation is carried on to the utmost extent.

In December, the weather becomes fine and the wind more steady from the north-east.

The population of Tanjore is dense, being nearly 2,000,000 for an area of 3,700 square miles, giving an average of 540 per square mile, but it amounts, in the richer parts, to 1,000 per square mile. It is composed chiefly (two thirds) of Hinduized local tribes and one third of settlers.

GROSS NUMBER.	CASTE OR RACE.	No.	EMPLOYMENT.	
1,804,000	1,200,000 { Hindus of local descent.	Vanniyan (Kallar ?).	574,000	Labourers.
		Paraiyan (Pallar ? &c.)	350,000	Menials.
		Sambadavan.	118,000	Fishermen.
		Idaiyans, Sánán, &c.	158,000	{ Herdsmen, potters, washers, &c.
	604,000 { Immi- grants.	Vellálan.	348,000	Cultivators.
Brahman.		127,000	{ Land and house- owners, scholars, idlers, &c.	
Chetti, &c.		129,000	{ Weavers, artificers, merchants, &c.	
103,000	Muhammadans, principally Labbé.		Trade, horticulture, &c.	
66,000	Christians.			
1,000	Others.			
TOTAL, 1,974,000				

There are said to be no wild or aboriginal tribes in the district.

Although the famine was scarcely over, in the beginning of 1878 there were no signs of distress visible, but all the people seemed well off. On the contrary, the upper classes seemed to be all the wealthier. Bricks were being made and burnt everywhere. New houses and buildings were being erected, and the effect of the famine appears only to have enriched the dwellers in this land of rice-fields. The labouring population being paid in grain as usual, the high prices prevailing elsewhere did not affect them.

XVI.—*On the proper relative Sectional Areas for Copper and Iron Lightning Rods.*—By R. S. BROUGH.

So far as mere conductivity is concerned, a comparatively thin wire of either copper or iron would suffice for the loftiest building; but such a thin conductor would be dangerous, because it would be fused by a heavy discharge of lightning.

Now the problem is to determine what relative sectional areas should be given to copper and iron rods, in order that neither should be more liable to fusion than the other.

The usual answer given, is, that an iron rod should have 4 times the sectional area of a copper rod.* This result is, I suppose, arrived at in the following way. The conductivity of copper is about 6 times as great as that of iron, but the melting point of iron is about 50 per cent. higher than that of copper, therefore $\frac{6.0}{1.5} = 4$, is the ratio for the sectional area of iron to copper.

This simple treatment of the problem, however, is incomplete, because it neglects to take three most important factors into consideration, namely, (1) the influence of the rise of temperature in increasing the electrical resistance of the metal, (2) the difference between the "thermal capacity" or "specific heat" of copper and iron, and (3) the fact that the iron rod being made several times more massive than the copper rod, it will require a proportionately greater quantity of heat to increase its temperature. These omissions introduce an enormous error in the result.

The effect of the passage of a discharge of lightning through the rod will be to raise its temperature.

The temperature (T) to which a given length of the rod will be raised will depend on

- (1) The quantity of heat developed by the discharge.
- (2) The mass of the rod.
- (3) The "Specific heat" σ of the metal composing the rod.

This may be expressed mathematically as follows :

$$T = \text{Const.} \frac{H}{\sigma m}$$

where m is the mass of the unit length of the rod, which we shall assume to be uniform in sectional area throughout its length, and H is the quantity of heat developed by the discharge.

* War Office Memorandum by Sir Fred. Chapman, R. E.

We may take $\sigma = 0.1018$ for copper, and $= 0.1218$ for iron. These figures were only verified by Dulong and Petit up to 800°C . It is probable, however, that their ratio, with which we are only here concerned, would not greatly alter at higher temperatures. At any rate, comparing the specific heat between 0° and 100°C , with that between 0° and 300°C , we infer that any alteration would be in favour of iron, *i. e.*, that the specific heat of iron would increase in a quicker ratio than that of copper.

Adopting the centimetre as the unit of length, the mass of one centimetre of the rod $= \rho a$, where a is the sectional area of the rod in square centimetres, and $\rho = 8.9$ for copper and $= 7.8$ for iron.

Further, assuming the quantity and duration of the discharge to be constants, $H = \text{Const.} \times R$, where R is the resistance of the unit length of the conductor.

But $R = \frac{\lambda}{a}$, where λ is the specific resistance of the metal per cubic

centimetre at its temperature of fusion.

We may take the melting point of copper as 1400°C , and that of wrought iron as 2000°C^* ; and, in order to find λ assume that Dr. William Siemens's formula, which he verified to 1000°C , holds good,† *viz.*—

$$\left. \begin{aligned} \lambda t &= \lambda_0 (0.026577 t^{\frac{1}{2}} + 0.0081443 t - 0.29751) \\ &\quad \text{for copper} \\ \lambda t &= \lambda_0 (0.072545 t^{\frac{1}{2}} + 0.0138183 t - 1.23971) \\ &\quad \text{for iron} \end{aligned} \right\}$$

The temperature t in these formulæ is to be measured from the absolute zero, so that we have $t = 1673$ for copper, and $t = 2273$ for iron.

The value of λ_0 per cubic centimetre of copper is 1.652 Microhms, and per cubic centimetre of iron is 9.827 Microhms.‡

Thus the value of λt per cubic centimetre of copper becomes 10 Microhms at 1673°C , and per cubic centimetre of iron becomes 107 Microhms at 2273°C .

$$\left. \begin{aligned} \text{Hence } H &= \text{Const. } \frac{10}{a} \text{ for copper} \\ \text{and } H &= \text{Const. } \frac{107}{A} \text{ for iron} \end{aligned} \right\}$$

* Rankine's Tables.

† Bakerian Lecture, 1871.

‡ Jenkin's Cantor Lectures, from Mathiessen's experiments.

$$\text{Therefore } T = \text{Const. } \frac{10}{0.1018 \times 8.9 \times a^2} \text{ for copper}$$

$$\text{and } T = \text{Const. } \frac{107}{0.1218 \times 7.8 \times A^2} \text{ for iron}$$

$$\text{Thus } T = \text{Const. } \frac{11.09}{a^2} \text{ for copper}$$

$$\text{and } T = \text{Const. } \frac{112.63}{A^2} \text{ for iron}$$

Now putting $T =$ the temperature of fusion in each case

$$1400 = \text{Const. } \frac{11.09}{a^2} \text{ for copper}$$

$$2000 = \text{Const. } \frac{112.63}{A^2} \text{ for iron}$$

$$\text{Therefore } \left(\frac{A}{a}\right)^2 = \frac{1400}{2000} \cdot \frac{112.63}{11.09}$$

$$= 0.7 \times 10.16$$

$$= 7.112$$

Whence $A = 2.7a$ about

$$= \frac{8}{3} a \text{ about}$$

or the sectional area of an iron rod should be to the sectional area of a copper rod in the ratio of 8 to 3.



XVII.—*Description of a New Homopterous Insect belonging to the Genus Cosmoscarta*.—By W. L. DISTANT. Communicated by J. WOOD-MASON.

COSMOSCARTA MASONI, n. sp.

Pronotum stramineous, with a quadrate black spot on anterior margin; head luteous; tegmina, pectus, legs and abdomen shining black. Prosternum with lateral borders stramineous.

Face robustly tumid, transversely strigose, with a central impunctate longitudinal impression; eyes prominent, luteous; ocelli distinct, shining, situated at about an equal distance from each other as from eyes; basal portion of the head somewhat pitchy. Pronotum thickly and finely punctured, with the lateral margins dilated and strongly reflexed, the lateral angles produced prominently outwards, and the posterior margin rounded, the disc is prominently raised and convex, across the centre of which is a faint impunctate central longitudinal line. The frontal quadrate black patch contains a deep, angular, linear impression on each side behind the eyes, and two small rounded impressions on the posterior border.

Tegmina obscurely and finely punctured; wings dark fuscous with the nervures black. Hind tibiae with a small spine towards apex.

♀. Long. ex. tegm. 17 mill. Exp. tegm. 45 mill.

Greatest long. pronot. $7\frac{1}{2}$ mill. Exp. lat. ang. pronot. 11 mill.

Habitat, Taoo, Tenasserim. Alt. 3—5000 ft.

The distinct colouration and more especially the peculiar structure of the pronotum, will serve to distinguish this fine species from any other of the genus. In the last respect its nearest allied form will be the *C. costalis*, Walk.*

This insect was contained in a collection of Tenasserim *Rhynchota* entrusted to me by Prof. Wood-Mason for determination. It is too soon to speak of their geographical affinities as a whole, but the genus *Cosmoscarta*, which was represented by two other species (*O. megamera* and *C. basinotata*), exhibits affinities which I believe will be shared by the other *Rhynchota* of this collection. *O. basinotata* has hitherto only been recorded from Borneo, and *O. megamera*, although found in N. India, has still been also received from Penang, Laos, and Hong-Kong.

* Stål no doubt correctly places this form as only a variety of *C. proserpina*, White a species I do not possess in its typical form.

XVIII.—On the Indian Species of the Genus *Erinaceus*.—By J. ANDERSON, M. D., Supdt. Indian Museum, and Professor of Comparative Anatomy, Medical College.

(Read 4th December, 1878.)

(With Plates III, IV, V and VA.)

Dr. Jerdon* recognized only two species of Indian Hedgehog, viz., *Erinaceus collaris*, Gray, and *Erinaceus micropus*, Blyth, distinguishing the former as the North Indian and the latter as the South Indian hedgehog. But besides these, the following supposed species had either been described or indicated as belonging to the Indian and Himalayan fauna, before the publication of Jerdon's work. They were as follows, according to priority, viz., *E. spatangus*, Bennett,† *E. grayi*, Bennett‡ *E. mentalis*, Gray§ (not described) and finally *E. nudiventris*, Horsfield.|| The two first of these were stated by Bennett to be from the Himalayas, while Gray recorded *E. mentalis* from India, and Horsfield *E. nudiventris* from Madras.

Dr. Jerdon doubtfully considered *E. grayi* as identical with *E. collaris*, and *E. spatangus* as the young of *E. grayi*, but he did not pass any opinion on the undescribed *E. mentalis*. In 1841, Wagner described a hedgehog under the name of *E. albiventris*,¶ and considered it as probably of Indian origin. On the strength of this opinion Jerdon was disposed to regard it as possibly *E. micropus*. Dr. Peters, however, very kindly arranged with the authorities of the Museum at Munich that the type of *E. albiventer* should be sent to him for comparison with a specimen forwarded to him by me, and which I then believed to be *E. micropus*, but which now proves to be a nearly allied species named by Stoliczka *E. pictus*.** This latter species, however, is so closely allied to *E. micropus*, in the structure of its feet, that the comparison instituted between its feet and those of *E. albiventer*, conclusively proves that the latter is a perfectly distinct form from both, as it only possesses 4 toes in the hind feet, whereas *E. micropus* and *E. pictus*, like all the other Indian species of hedgehogs, have 5 toes in the hind feet. Dr. Peters is of the opinion that *E. albiventer*, is probably the young of *E. heterodactylus*, Sundvl. from Africa.

* Mammals of India, 1867, p. 62.

† Proc. Zool. Soc. Lond. 1832, p. 123.

‡ l. c. p. 124.

§ List. Mamm. B. M. 1851, p. 81.

|| Cat. Mamm. East. Ind. Co. Mus. 1851, p. 136.

¶ Schreber, Säugeth. Vol. (Supp.) 11, 1841, p. 22.

** Stoliczka, Journ. As. Soc. Beng., Vol. XLI, 1872, p. 223.

From the facts to be hereafter stated there can be no doubt but that these two species, *E. micropus* and *E. pictus* are perfectly distinct from each other, and from any other species of Indian hedgehog ever described.

It would also appear from what I have stated under *E. grayi*, that it is a well-defined species, and that it is probably the hedgehog which was figured by Gray from the Doab as *E. collaris*, but which was never described, and also that Dr. Jerdon was correct in regarding *E. spatangus* as the young of *E. grayi*, the latter term being the one that should be accepted for the species.

Dr. Gunther, to whom I am indebted for comparing the hedgehogs in the British Museum with certain specimens forwarded from the Indian Museum, informed me that the true relations of *E. mentalis* cannot be properly determined. I regret, however, that having mislaid Dr. Gunther's notes, I am unable to give the details of his comparisons.

I have personally examined the type of *E. nudiventris* which is a very young example of *E. micropus*.

Besides these three species, *E. micropus*, *E. pictus*, and *E. grayi*, the materials which have passed under my observation* have yielded two other apparently distinct species of hedgehog from Western India, and which I propose to name respectively *E. jerdoni*, and *E. blanfordi*, the distinctive characters of which are indicated hereafter. We have thus five species of hedgehog in India, three of which are forms which were unknown when Fitzinger† published his compilation on the *Erinaceida* in which he recognized *E. grayi*, *E. collaris*, *E. spatangus*, *E. mentalis*, *E. nudiventris* and *E. micropus*, referring them all to a trivial sub-genus *Hemiechinus*.

The hedgehogs of India are referable to two distinct groups, based on the characters of the dentition. *E. micropus* and *E. pictus* resemble each other in the following dental detail, wherein they differ from the other Indian hedgehogs, but whether any of the African forms are like them in this respect I am unable to say. The character I refer to is this, that the second upper premolar has a simple crown and only one fang, whereas *E. grayi*, *E. jerdoni*, *E. blanfordi*, *E. macracanthus*, *E. niger*,‡ *E. megalotis*, *E. auritus*, *E. albus*, and *E. europæus*, have the same tooth large with a compound crown and with 3 fangs. In both the species, the second upper premolar is very small and somewhat external to the line of the other teeth. In *E. pictus*, the tooth would appear to be generally present throughout life, and it is larger than in *E. micropus*, in which it seems to be generally lost at an early age. In hedgehogs with a compound second premolar, the tooth is

* I am specially indebted to Mr. W. T. Blanford for his having placed his fine series of Indian hedgehogs, preserved in alcohol, at my disposal for examination.

† Sitzsaber. Ak. Wiss. Wien. LVI. 1867, pp. 844, 890.

‡ For description of this species see following pages (p. 212).

always in the line of the other teeth and always large and is never prematurely shed.

The first premolar also of the lower jaw is relatively smaller than in the species just enumerated, and it is smaller in *E. micropus* than in *E. pictus*.

There is a remarkable circumstance connected with *E. micropus*. In examining the different species of Indian hedgehogs, I was in the habit of having their skulls removed and cleaned for examination, and in having this done with *E. micropus* I was always disappointed on receiving back the skulls from the osteologist to find what I supposed was a broken zygomatic arch, owing to careless manipulation. The Museum osteologist, however, persisting in asserting that he was most careful in preparing the skulls, and that he had not injured them, I had a careful dissection made from without inwards on to the zygomatic arch, and I was astonished to find that there was no trace of a malar bone in any specimens of *E. micropus* examined by me, 4 in all. This fresh dissection showed that the interval between the zygomatic process of the squamous and the malar process of the maxillary is bridged over by tendon, and that therefore this South Indian hedgehog stands alone in this remarkable feature. Such a variation on the normal structure of the skull of a hedgehog was not to be anticipated, as there is no weakening of the zygomatic arch in any of the other species. Even in the allied species *E. pictus*, the malar is strongly developed. An examination of the free ends of the process of the maxillæ and squamous shews that this observation is perfectly accurate, as there is no indication whatever of any specialized surface on which a malar could rest, and which is always easily observable in skulls of other species in which the malar has been lost.

Notwithstanding this anomalous character, I am disposed to attach more weight to the character of the second upper premolar in this species than to the absence of its malar, which is an intense specific variation, whereas the other which is common to two species very closely allied in other details of their structure would seem to be almost entitled to sub-generic rank.

These two forms, *E. micropus* and *E. pictus*, notwithstanding the foregoing difference in the skulls, are externally so alike that they might be mistaken for one another. Not only is their coloration almost identical, but the form of their heads is much the same; and more important, their fore feet more especially differ essentially in shape from the fore feet of all the other Asiatic species of hedgehogs (see figs. *e* and *f*, Pl. III, and compare with fig. *f*, Pl. IV). Both of these species are characterized by their feet being short, club-shaped, and tubercular on the soles, whereas in such forms as *E. grayi* and the other Asiatic hedgehogs, the feet are not club-

shaped and tubercular, but moderately elongated with well-developed toes and generally long claws.

The feet of hedgehogs would appear to be the subject of considerable variation, as some have only 4 toes on the hind feet, (*Peröechinus* Fitzinger), and moreover the central pad of the hind feet would appear to be rudimentary in some species and to be present in others, while, as has just been shown, some of them have tubercular soles. It appears to me therefore that reliable specific characters are to be observed in the feet of the members of this genus, but I do not consider any of the variations to be of sub-generic value. As an illustration of the differences that subsist in this respect, it will be observed that the species *E. grayi* does not possess any true central pad on the hind foot, a structure which is largely developed in *E. jerdoni*, but nearly absent in *E. blanfordi*, which, as was to be expected from this circumstance, is closely allied to *E. grayi*.

Another feature in the structure of Indian hedgehogs is deserving of attention, and that is the presence on the vertex, in some species, of a considerable nude area quite devoid of spines, and even of the most rudimentary hairs. This naked area reaches forwards to where the spines arise on the forehead, dividing those on this region into two sets, one on either side of the head. It occurs in all the Indian species with the exception of *E. grayi* and *E. blanfordi*, and it is present also in *E. niger* and *E. macracanthus*, whereas it does not appear to exist in the European hedgehog and I have not observed it in any of the following species, viz., *E. auritus*, *E. albulus*, and *E. megalotis*, all of which, however, like the Indian species, whether with or without this area, agree in having fine soft almost silky hair, very distinct from the long bristly hair that clothes the body of the European species.

In the Zoology of Persia* a small hedgehog is figured along with the type of *E. macracanthus*. Both of the specimens which yielded the figures are now in the Indian Museum and the latter is distinguished (*E. macracanthus*,) by this nude area and black spines with two white rings, and the former, which Blanford considered as a young specimen of the species, by the entire absence of the bare area and by yellowish spines of which the tips are white, followed by a narrow black ring succeeded by a white and this again by a short brown space. This small hedgehog in the character of its spines and in the absence of the bare area on the vertex resembles *E. megalotis*, but it does not appear to be that species. I am disposed to conclude that this bare area is of too great structural importance to be present or absent among members of a species and to consider it as of specific significance. With regard to the disposition of the spines it would appear that

* Zool. of Persia, Blanford, 1876, Pl. 1.

their relative positions to each other depend greatly on the condition of the *panniculus carnosus*, and that the spines only become irregularly intermixed through contractions of this muscle which, when relaxed, permits the spines to lie flat and regularly.

On the label of an example of *E. albulus*, collected by Stoliczka, he has written, "outer edge of nostrils ciliated." On looking at the nostril in all the Indian species of hedgehog, I find that the outer edge, more especially the upper crescentic half, is provided with a papillary valve which serves to close the orifice. In *E. grayi*, it forms a distinct fringe of 12 papillæ.

The spines of the Indian and Western Asiatic hedgehogs are grooved and ridged, the ridges being covered with fine tubercles. The numbers of the ridges on the spines of the same animal are subject to considerable variation, and the degree to which the tubercles are developed appears to vary, so that stable specific characters are not yielded by these structures.

The foregoing characters, therefore, permit of the Indian hedgehogs being resolved into the following groups, and of the species being recognized by the characters under which they are grouped.

A. SECOND UPPER PREMOLAR SIMPLE, ONE-FANGED.

a. Feet club-shaped, soles tubercular.

I. A division or bare area on the vertex.

No malar bone: a prominent dark brown band through the eyes on to the neck. A white frontal band. Spines orange with apices white, succeeded by a narrow dark brown band.

Ears moderate. Fur below white, limbs brown, *E. micropus*.

A perfect malar bone: a brown band through the eyes and only very rarely prolonged on to the neck, stopping at the angle of the mouth. Spines broadly white at apex, succeeding brown band rather pale: no orange tint on spines. Ears round and not large, but larger than in the preceding species. Limbs pale brown, under-surface white, ... *E. pictus*.

B. SECOND UPPER PREMOLAR COMPOUND, THREE-FANGED.

b. Feet well developed and broad.

II. No division or bare area on the vertex.

No large mesial pad on the hind foot. Head elongated and muzzle long. Ears large, high and pointed. General colour dark brown, *E. grayi*.

Mesial pad on the hind foot very feeble. Head short, muzzle not elongated. Ears moderately large, not high and not pointed. General colour black above, fuliginous-brown below, *E. blanfordi*.

III. A division on the vertex, separating the spines into two groups. Hind foot with a large prominent mesial pad. Muzzle moderately long. Ears large, rounded at the tip and broad at the base. Spines long with 2 white and 3 black bands in the adult. General colour black above and below, ... *E. jerdoni*. The following is a description of these species in detail:

ERINACEUS MICROFUS. Plate V⁴.

Erinaceus auritus, Pearson, Journ. As. Soc. Bengal, Vol. V, 1836, p. 191.

Erinaceus collaris, Gray. List. Mam. B. M. 1843, p. 81, *partim*.

Erinaceus micropus, Blyth, Journal Asiatic Soc. Bengal, Vol. XV, 1846, p. 170, *partim*; *id. op. cit.* Vol. XXII, 1853, p. 582; *id.* Cat. Mam. Mus. As. Soc. Bengal, 1863, p. 80: Wagner, Schreber, Säugeth, Suppl. V, 1855, p. 591; Stoliczka, Journal Asiatic Soc. Bengal, Vol. XLI, 1872, p. 225.

Erinaceus nudiventris, Horsfield, Cat. Mam. East Ind. As. Mus., 1851, p. 136.

Erinaceus (Hemiechinus) micropus, Fitzinger, Sitzungsbe. der K. Akad. Wissensch. Wien, Vol. LX, Pl. 1, 1867, p. 875, *partim*.

Head rather short, and broader than *E. pictus*, and slightly concave from the forehead to the tip of the snout. Ears moderately large and rounded at the tip, directed forwards and outwards, and slightly smaller than the ears of *E. pictus*. Feet well developed, but small, short and broad, with short toes and short claws: feet being somewhat larger than those of *E. pictus*. The first toe of the hind foot small, but claw strong. The soles of the hind feet more or less tubercular. When the muscle is not contracted over the forehead, the spines do not reach anterior to the front margin of the ears. There is a broad bare space passing backwards from the forehead for about one inch and a quarter, with a nearly uniform breadth of half an inch, and this bare area would appear to exist in both sexes of the species. The tail is short, and there is a semicircular bare area above it. The ears are moderately but sparingly clad with short whitish hairs, and the tail with longish dark brown hairs. The anterior third of the head, up to half way between the nose, the eye, and the chin appear to be nude, but they are very sparsely covered with minute white hairs. The middle third of the head is covered more profusely with longer hairs, and the posterior third, to between the ears, densely with moderately long hairs, increasing in length from before backwards. The upper surfaces of the feet are well clad with short flattened brown hairs. The bare surfaces on the head and above the tail are perfectly devoid of hairs. The under surface is not very thickly clad and the

insides of the limbs are still less so. The spines are rather fine, about 0·83 of an inch long, very sharp and marked with from 17 to 22 ridges and furrows, the former generally broader than the latter, and covered with minute shining tubercles. The apex of each spine is white and is succeeded by a narrow dark brown band which gives a brown and white speckled appearance to the animal. The remainder of each spine is yellow or orange yellow. The seminude skin of the anterior third of the head is leaden-coloured, a hue that extends on to the chin. The hairs on the second or middle third of the head form a broad brown band which embraces the eye, passes backwards behind the angle of the mouth, over the under surface of the neck as a dark brown collar. A brown spot at the upper angle of the ear. A broad white band behind the brown band and the spines of the forehead, passing downwards before the ears on to the sides of the neck and throat, behind the brown band, and continuous with the white of the under parts; chin and whiskers white, and sides of chin brownish. The lower halves of the limbs clad with brown hairs, also the tail. The inguinal region and lower abdomen clad with brown hairs with an intermixture of white.

The leading features of this species are its short snout and head, short club-shaped feet as compared with *E. grayi*, *E. blanfordi*, and *E. jerdoni*; its slightly longer feet as compared with *E. pictus*, which are, however, of the same type; its not long ears, slightly shorter than in the latter; its white and brown tipped spines, orange or yellow; and a brown collar over the forehead, between the eyes, behind the angle of the mouth and across the throat.

The skull is distinguished by its short broad character, but in this respect it is much narrower than the skull of *E. pictus*. In the former, the breadth across the zygomata falls short considerably of two thirds of the length, whereas in *E. pictus*, breadth and sharpness are marked features of the skull, combined with a greater post-orbital contraction than in *E. micropus*, and, in the adult male, the breadth generally equals two thirds of the length. The complete absence of the malar bone is another character which separates it from *E. pictus*, from which it is also distinguished by the small size of its 2 upper premolars.

The following are some measurements of *E. micropus*.

	♂	♂	♂
Length of body and head,	6" 65	6" 05	5" 90
„ of tail,	0" 45	0" 53	0" 57
Height of ear,	1" 15	1" 05	1" 02
Breadth of ear,	0" 80	0" 78	0" 76
Snout to eye,	1" 00	0" 94	0" 94
Eye to ear,	0" 40	0" 31	0" 38
Length of hind foot without claw, ...	1" 15	1" 13	1" 15
Breadth at 5th toe,	0" 36	0" 40	0" 30

Blyth, in 1846,* in treating of the hedgehogs collected by Hutton near the Sutlej, pointed out that the third specimen described by Hutton,† with some doubt, under the name of *E. collaris*, Gray, was apparently distinct from that species. Blyth was disposed to regard it as identical with a hedgehog in the Asiatic Society's Museum, the locality of which he then stated was unknown, but which he afterwards considered‡ to have been received from the Nilgiris from Mr. Smoult and to be the specimen mentioned by Pearson as *E. auritus*. This latter specimen Blyth regarded as specifically identical with hedgehogs sent him from Southern India by Sir Walter Elliot, and with the hedgehog from Southern India in the British Museum grouped by Gray under *E. collaris*. He compared the skull of an adult specimen sent from Southern India by Sir Walter Elliot with the skull of Mr. Smoult's hedgehog and found them exactly to correspond, and these specimens he named *E. micropus*, the last mentioned being the type of the species. The skull, however, of Capt. Hutton's third specimen he goes on to remark "presents some differences; the general form is rather shorter and broader, it is more constricted between the orbits and the zygomæ are considerably more projecting; the small upper premolar anterior to the incisor teeth is less minute; and in the lower jaw, the second lateral pair of incisors from the front are much smaller, as indeed are also the next or last pair of the true incisors." From the description of this specimen which was obtained by Hutton§ in the neighbourhood of Shah Fârid on the left bank of the Sutlej, and from the details regarding the points wherein its skull differs from the skull of the Southern Indian hedgehog, I am disposed to consider, that Hutton's third specimen was an example of *E. pictus*. In 1853|| Blyth was still doubtful regarding the specific identity of Hutton's third specimen with *E. micropus*.

The next species, the cranial characters of which had been so well indicated by Blyth in 1846 and which entitle it to recognition, was described in 1872 by Stoliczka as *E. pictus*, but no reference was made to Blyth's observations, nor to the cranial and dental features of the animal. The characters selected by Dr. Stoliczka were exclusively external, and were derived from supposed differences existing between its spines and those of *E. micropus*, but after a very careful consideration of a large series of spines of both forms under the microscope, it appears to me that much importance cannot be attached to these structures as guides to species.

* Journ. As. Soc. Bengal, Vol. XV, p. 170; *op. cit.*, Vol. V, 1836, p. 191.

† *op. cit.*, Vol. XIV, p. 351.

‡ *op. cit.*, Vol. XXII, 1853, p. 582.

§ *op. cit.*, Vol. XIV, p. 351.

|| *op. cit.*, Vol. XXII, 1853, p. 582.

Gray in his List of Mammalia* confounded this species with his *E. collaris*, = *E. grayi*.

E. micropus appears to be confined to Southern India, where it occurs in the low lying country and not on the mountains. Col. Beddome informs me that no hedgehog is found on the Nilgiris. The limits, however, of its northern and western distribution have yet to be ascertained.

ERINACEUS PICTUS. Plate III.

? *Erinaceus indicus*, Royle, Ill. Ind. Zool. 1839, p. 6, not described.

Erinaceus collaris? Hutton, Journ. Asiatic Soc. Bengal, Vol. XIV, 1845, p. 351, 3rd specimen, *partim*; Blyth, l. c. p. 352, foot note, *id. op. cit.*, Vol. XXII, 1853, p. 582, *partim*.

Erinaceus micropus, Blyth, Journ. Asiatic Soc. Vol. XV, 1846, p. 170, *partim*.

Erinaceus (Hemiechinus) micropus, Fitzinger, Sitzungsbt. der K. Akad. Wissensch. Wien, Vol. LVI, Pt. 1, 1867, p. 875, *partim*.

Erinaceus (Hemiechinus) pictus, Stoliczka, Journal Asiatic Soc. Bengal, Vol. XLI, 1872, p. 223.

Head (fig. *d*) the same as in *E. micropus*, but the ears (fig. *g*) somewhat larger, and the feet (*c* to *f*) narrower and not quite so long: the tail (fig. *h*) also is the same as in that species. The spines have the same characters as in *E. micropus*, but their tips are more broadly white and the brown bands below are not so dark. The result is that the latter are nearly obscured by the former. The remaining spines are pale yellowish, nearly white and not orange. There is no continuation of the brown band of the forehead lower than the angle of the mouth, except as a very rare circumstance, and in animals from the region of Central India, where the species probably meets the Southern *E. micropus*, but the colours in all other respects are alike. The dimensions of the species are these:

	♂	♂	♀	♀	♀
Length of head and body,	6" 70	6" 00	5" 85	5" 90	4" 78
" " tail,	0" 68	0" 68	0" 55	0" 53	0" 58
Height of ear,	1" 33	1" 23	1" 03	1" 21	0" 85
Breadth of ear,	0" 86	0" 88	0" 70	0" 81	0" 61
Snout to eye,	0" 88	0" 80	0" 88	0" 95	0" 78
Eye to ear,	0" 39	0" 35	0" 30	0" 30	0" 25
Length of hind foot without claw, ...	1" 10	1" 12	1" 10	1" 10	0" 95
Breadth across 5th toe,	0" 35	0" 30	0" 25	0" 35	0" 30

The skull (figs. *a* to *c*) is distinguished by its shortness and great zygomatic breadth, in which respects it differs from the skulls of all other Asia-

* List of Mamm. B. M., 1843, p. 81.

tic hedgehogs, and, as already stated, by its one-fanged simple second premolar placed out of the line of the teeth, and by the rather marked post-orbital contraction. The teeth are large and about the same size as in *E. micropus*, only the second premolar of the latter is excessively minute. The other characters wherein it differs from *E. micropus*, have been already indicated under that species.

As already remarked, this form was first described by Hutton as a probable variety of certain hedgehogs which he doubtfully regarded as *E. collaris*, which two of them appear to have been, but this third specimen, however, was undoubtedly *E. pictus*. *E. micropus* has diverged from the ordinary character of the genus more than any other Indian hedgehog, as is evinced by the absence of the malar, and in the excessively rudimentary character of its second premolar, and these modifications occurring in the most southern outlier of a Palearctic type are noteworthy.

A hedgehog obtained at Guna by Dr. A. Barclay would seem to indicate that the two species may possibly interbreed, as I have experienced some difficulty, judging by external characters only, in saying to which it should be properly referred. The coloration of its spines is more like that of *E. pictus*, than *E. micropus*, as the tips are broadly white, but, unlike any other example of *E. pictus* that has come under my observation, the brown band from the forehead is prolonged beyond the angle of the mouth across the throat. In all other respects, the coloration is alike to that of *E. micropus*. The ears also are somewhat larger than in *E. pictus*. The affinities, however, of this hedgehog as manifested by its teeth and the form of its skull are towards *E. pictus*.

Besides occurring at Guna, the most southern locality from which I have obtained it, I have received it also from Ulwar, from Major T. Cadell, V. C.; and the Indian Museum also came into the possession of a large number of specimens from Agra through Mr. A. E. Carlleyl. An example from Karachi has been received by exchange with the Municipal Museum, through the valued assistance of Mr. J. A. Murray. This latter specimen agrees with one in Mr. W. T. Blanford's possession from the same locality. He also possesses an adult male from Jeysulmere, the dimensions of which are given in the first column of the foregoing measurements.

It is probable that *E. indicus* was applied by Royle to the hedgehog which occurs about Delhi, and which appears to be this species.

ERINACEUS GRAYI. Plate IV.

Erinaceus collaris, Gray, Ill. Ind. Zool., Vol. I, 1872, Plate VIII, (not described): *id.* List. Mamm. B. M. 1843, p. 81, *partim*: Hutton, Journ. As. Soc. Bengal, Vol. XIV, 1845, p. 351, (first two specimens only);

Blyth, *op. cit.*, Vol. XV, 1846, p. 170 : *id. op. cit.*, Vol. XXII, 1853, p. 582, *partim* ; Wagner, Schreber, Säugeth. Suppl., Vol. V, 1856, p. 590 : Stoliczka, Journ. As. Soc., Vol. XLI, 1872, p. 225.

Erinaceus grayi, Bennett, Proc. Zool. Soc. 1832, p. 124 ; Gray List Mamm. B. M. 1843, p. 81 : Wagner, Schreber, Säugeth., Suppl. Vol. II, 1841, p. 28 ; *id. op. cit.*, Suppl. Vol. V, 1856, p. 590 ; Fitzinger, Sitzungsbtte. der K. Akad. Wien, Vol. LVI, Pt. 1, 1867, p. 870, *partim* ; Stoliczka, Journ. As. Soc. Beng., Vol. XLI, 1842, p. 225.

Erinaceus spatangus, Bennett, Proc. Zoo. Soc. 1832, p. 124, *juv* ; Ogilby, Royle's Ill. Ind. Himal. Botany, 1839, p. 62 ; Blyth, Journ. As. Soc. Bengal, Vol. XV, 1846, p. 170 ; Gray, Mamm. B. M., 1843, p. 82 ; Wagner, Schreber, Säugeth., Suppl. Vol. II, 1841, p. 27 ; *id. op. cit.* Suppl. Vol. V, 1856, p. 590 ; Stoliczka, Journ. As. Soc. Bengal, Vol. XLI, 1872, p. 225.

Hemiechinus grayi, Fitzinger, Sitzungsbtte. der K. Akad. Wien, Vol. LVI, Pt. 1, 1867, p. 870.

Hemiechinus collaris, Fitzinger, Sitzungsbtte. der K. Akad. Wien, Vol. LVI, Pt. 1, 1867, p. 872.

Hemiechinus spatangus, Fitzinger, Sitzungsbtte. der K. Akad. Wien, Vol. LVI, Pt. 1, 1867, p. 873,

Facial portion of head pointed and rather long (fig. *d*). Ears (fig. *g*) large, full, long and somewhat pointed. Feet (figs. *e* and *g*) large, the fore feet rather broad and somewhat truncated, with moderately long toes and powerful claws. The proximal palmar pads forming a pair, and not very prominent. The hind feet with the toes turned inwards, the fingers moderately long and with strong claws. The proximal pad of the sole internal to the first toe, and which is strongly developed as a large mesial pad in *E. jerdoni*, is practically absent in this species, so little is it developed.* The tail (fig. *h*) is moderately long and shortly haired ; no bare space on the vertex. The spines begin slightly behind the anterior margin of the ear, and they are generally about 0.75 long. The longitudinal grooves are numerous and shallow, but broader than the ridges which are 25 to 26 in number and studded with small tubercles. The spines are very narrowly tipped with black, and below this there is a very narrow yellowish band, succeeded by a broad dark-brown, almost black band, the remainder of each spine being yellow, except at its extreme base which is dusky. The broad dark-brown band below the yellow subapical band is so strongly developed, that when the animal is viewed from the side, with the spines directed outwards, it has a black appearance. There is, however, considerable variation in the intensity to which the yellow sub-apical band is developed, and some animals are

* The artist has not well represented this feature on the plate.

therefore much lighter coloured than others, as the brown band succeeding the latter is also much paler in some individuals than in others.

This species, besides the almost entire absence of the proximal mesial pad of the sole, is at once distinguished by the complete absence of the bare space that occurs in *E. pictus*, and *E. micropus*, among the spines of the vertex. From the two last named species which have no large proximal pad on the sole, it is recognised by its large feet, well developed toes, powerful claws, and by the turning in of the hind feet, as well as by its different coloration. There is a considerable naked space over the sacrum, and on the dorsum of the tail as in other species. The snout is seminude, being sparsely covered with very minute hairs. Behind the whiskers, the hairs become much more numerous and longer, and the area below the eye, and the forehead are well clad. The greater part of the front of the ear is nude, but there is a sprinkling of short white hairs internal to and along its margins. The chin and below the lower lips are almost naked, and, immediately behind the chin, the hairs are few. The under parts are well clad, but not densely so, and the limbs are thinly clad, more especially the feet on which the hairs are very few and short. The tail also is only sparsely clothed.

The general colour of the animal is blackish-brown or brown, the spinous portion of the body being darkest; but the colour is variable owing to the reasons already mentioned.

The front of the face from the nose backwards to the spines, the limbs and all the under parts with the exception of the chin and a line from it upwards to the ear which are white, are generally dark-brown or fuliginous-brown, blackish on the face, on which there is occasionally a considerable intermixture of white hairs. The hairs which clothe the ears, and a tuft of hairs at the base of the anterior margin of the ears, are white. The white on the chin is more prolonged upwards to the ears in some specimens than in others, giving rise to a kind of white collar which is much exaggerated in the figure of *E. collaris*. The claws are horny yellow.

The following are the measurements of this species:

	♂	♀	♀
Length of body and head,	6" 85	6" 70	6" 70
" of tail,	0" 96	1" 30	1" 02
Height of ear,	1" 45	1" 52	1" 38
Breadth of ear,	0" 97	0" 97	1" 00
Snout to eye,	1" 00	0" 49	0" 62
Eye to ear,	0" 52	0" 49	0" 62
Length of hind foot without claw,	1" 45	1" 45	1" 50
Breadth of hind foot,	0" 49	0" 45	0" 38

The skull of this species (figs. *a* to *d*) is distinguished from that of *E. pictus*, and the skull of *E. micropus*, by its large second premolar with three fangs, and from the other two species by its great zygomatic breadth. In this latter respect, it resembles *E. pictus*, but the skull has a considerably longer muzzle than in that species, and, as a whole, is not so broad and round. It is considerably broader than *E. blanfordi*, with more marked post-orbital contraction, and from *E. jerdoni* it is still more markedly separated by its relatively much greater breadth across the zygomatic, and more especially across the base of the muzzle, at the third premolar. The skull is undoubtedly most nearly allied to that of *E. blanfordi*, to which it presents a very close resemblance when the adolescent skull is compared with the adolescent skull of the type of that species. But the latter is narrower across the zygomæ, and has less post-orbital contraction, as already stated. It is further separated from the skull of *E. jerdoni* by its larger teeth, and by the different form of the canine. This tooth in *E. blanfordi*, as well as in this species, is less triangular and more sharply pointed than in *E. jerdoni*, *E. niger*, *E. pictus*, and *E. micropus*, and in this respect differs more in appearance from the first premolar than it does in these last-named species. All of these species are characterized by the presence of two sharp cusps to the canine section of the third premolar, while in *E. niger* described by Blanford, the posterior of these two cusps is entirely absent and its last molar presents only one eminence, while in all the others this tooth has two cusps the inner of which is always the larger.

The figure in the Illustrations of Indian Zoology was copied from one of General Hardwicke's drawings, and on the plate it is stated that the hedgehog was a species found in the Doab. There are many tracts of country in North-Western India named Doab, but General Hardwicke appears from his paper on *Mus giganteus*,* in using the term Doab, to have had in view the country lying between the Jumna and Ganges, in which the military Station of Fatehgarh is situated, and where he appears to have been stationed. There he had drawings made of the species of hedgehog which is there common, also of *Mus giganteus*, and of *M. (Nesokia) hardwickii* = *Arvicola indica*, Gray.

I am indebted to the late Mr. Andrew Anderson for many living examples of the hedgehog that occurs about Fatehgarh, and which appears to me to agree with the figure of *E. collaris*, from the Doab. As in the figure, the chin of these hedgehogs was more or less white, and, in some, the white extended up towards the ear as a kind of collar which, however, is exaggerated in the drawing of *E. collaris*, in which the contrast between the colours is too marked, and the animal altogether represented too dark. Notwithstand-

* Trans. Journ. Linn. Soc. Vol. VII, 1804, p. 308.

ing, I think there can be but little doubt, that the Fatehgarh hedgehog which is very common in the district is the *E. collaris*, Gray.

The specimens from Madras in the British Museum referred to this species are, as already mentioned, examples of *E. micropus*, Blyth.

This species has been also obtained at Ajmír in Rájputána by Mr. Blanford, and if I am correct in referring to it Hutton's two specimens, it extends west to the Sutlej. There Hutton obtained it in separate holes, "beneath a thorny bush called 'Jhund' in the desert tracts of shifting sand between Sundah Badairah and Hasilpoor," on the left bank of the Sutlej, and apparently in close proximity to *Erinaceus pictus*.

ERINACEUS BLANFORDI, n. s., Plate V.

Muzzle rather short (fig. *d*) and not much pointed; ears moderately large (fig. *g*), but broader than long and rounded at the tips, which are not acuminate as in *E. grayi*. The length of the anterior margin is equivalent to the breadth of the ear at its base. The feet (figs. *e* and *f*) are large and the hind foot resembles that of *E. grayi*, with the first toe well developed and there is the absence of any well developed median pad. The feet are also larger and broader than in *E. jerdoni*, and the first toe is more largely developed as in *E. grayi*. The claws are long and curved, especially those of the fore foot. The tail (fig. *h*) is short. The spines meet in a point on the forehead and do not reach quite so far forwards as the base of the upper border of the ear, and there is no bare patch in the midst of them, on the vertex. They are moderately long with 24 to 28 concentric ridges and furrows, the former finely tubercular. The general colour of the spiny portion of the animal is deep black, when the spines are looked at directly on end and when they are at rest, but when raised or seen sideways, the mesial yellow band becomes visible. The apex of each spine is broadly tipped with deep black, and this is succeeded by a very broad yellow mesial band, the base of each spine being dusky brown. The fur generally is deep brown and moderately long and soft. A few white hairs occur on the chin, and there is a tuft of white hairs at the anterior angle of the ear, and the latter anteriorly and posteriorly is sparsely covered with white hairs.

The skin of the back of the ear is blackish, also the margins of the ears anteriorly, but the centre of the ear is white. The claws are yellowish.

Measurements of *E. blanfordi*.

	♂
Length of body and head,	5 36
" of tail,	0 91
" of hind foot without claw,	1" 32
Height of ear,	1" 10

Breadth of ear,	0" 85
Nose to eye,	0" 72
Eye to ear,	0" 85

The skull (figs. *a* to *c*) of this species is distinguished from that of *E. grayi*, by its much less zygomatic breadth and by the less protuberant character of the supra post-orbital region. The teeth in both these species have much the same general characters. It is undoubtedly very closely allied to *E. grayi*, which it resembles in the absence of a bare area over the vertex, in its large feet with its hind toes somewhat turned inwards, and strong and long claws, and in the almost complete absence of a mesial pad on the hind foot, but it differs from it externally in its shorter muzzle, much shorter and more rounded ears, and in its darker coloration, and smaller size.

This species is known only from one specimen procured by Mr. W. T. Blanford at Rohri in Sind, where it is apparently associated with *E. jerdoni*, and I have named the species after its discoverer.

ERINACEUS JERDONI, n. s., Plate V4.

Muzzle moderately long and pointed. Ears large, rounded at the tips and broad at the base. Feet large, more especially the fore feet which are broad and powerful, with strong claws. The hind feet well developed, but proportionally not so large as the fore feet. A large well developed pad on the under aspect of the hind foot. Claws strong. The tail moderately long. The spines begin on a line with the anterior margins of the ear, divided on the vertex by a large nude area as in *E. micropus* and *E. pictus*. The spines are not very thick and they are marked generally with 19 grooves and 19 ridges, the latter exceeding the breadth of the former and being very sharp, with the tubercles passing down on their sides, almost into the hollow of the furrow. The animal is black when the spines lie flat, but when they are partially erected, the white bands show, and a variegated appearance is produced. In the adult with the spines 2"·15 in length, there are two white and three dark bands. The apical band is broad and deep shining black, and it is succeeded by a white band nearly of the same breadth, which is followed by a brown band with a white band below it, and then a dusky basal band. These are the characters of two females from Karachi, but in the younger of the two, the spines are 0"·97 in length and the basal band is hardly developed. In an adolescent male from Rájampur, which I refer to this species, there is generally only one white central band to each spine, the apical and basal bands being black. In a few, however, measuring 0"·75 in length, there are two white and three apical bands as in the type, and it is probable that in this adolescent male as it reached maturity and its spines grew, the coloration of the

type would be attained. In a still younger female from Rohri, Sind, and for the privilege of examining which I am indebted to Mr. W. T. Blanford, the spines are fine and rather soft, and the majority of them do not exceed 0"·80, but yet they have only one white band prominently developed, although the basal white band is more or less indicated.

The hair generally is dusky brown, with an intermixture of grey hairs on the head and on the chin and throat, the fur behind the latter area and on the sides of the neck being paler brown than on the limbs and on the sides. A patch of white hairs occurs at the base of the anterior angle of the ear, and the inner surface of the ear is clad with short white hairs and the apical third of the back of the organ with similar hairs. The moustaches are brown and reach behind the ear. The claws are yellow.

Measurements of *E. jerdoni*.

	Adult.	Adolescent.
	♀	♂
Length of body and head,	7" 45	5" 85
" of tail,	1" 25	0" 91
" of hind foot without claw,	1" 48	1" 40
Height of ear,	1" 40	1" 35
Breadth of ear,	0" 76	0" 80

The skull of the female in its general characters is allied to the skull of *E. macracanthus*, Blanford, but is considerably less, with smaller teeth, the upper dental line of the latter measuring 1"·03 to 0"·97 in this species, which is a considerable difference in such small skulls. The skull also of *E. macracanthus* is characterised by a considerable concavity on the mesial line in the fronto-parietal area, which does not exist in this species. The skull has also a very strong resemblance to the skull of *E. niger*, but it is a relatively broader skull than the latter, which has an attenuated facial region, less post-orbital breadth and less temporal contraction, a smaller brain case, and only one internal cusp developed on the third premolar. It is distinguished from the skull of *E. blanfordi* by its more slightly elongated character, by its greater post-orbital breadth and swelling, by its relatively longer and less expanded zygomatic arch, more produced muzzle and by its teeth. It is markedly distinct from the short but especially broad skull of *E. grayi*, and it has much smaller teeth than that species.

The external features which appear to me to entitle this form to recognition as a species distinct from *E. blanfordi*, are the very prominent character of the mesial pad on the hind foot, its larger ears and the presence of a large nude area on the vertex, as in *E. micropus* and *E. pictus*, this latter character along with those already indicated separating it from *E. grayi*.

It resembles *E. niger*, in having a bare mesial area on the vertex, but is distinguished from that form by its smaller fore feet and smaller ear, and by its cranial characters as well.

There can be little doubt, however, but that *E. macracanthus*, and *E. jerdoni*, are very closely allied forms, but I believe that the characters I have indicated will be found persistent and reliable guides to enable them to be distinguished the one from the other.

This species occurs at Karachi, from whence I have received it from Mr. J. A. Murray, the Curator of the Karachi Museum, and from Rájánpur from Dr. E. Sanders. Mr. Blanford has also obtained it at Rohri, in Sind.

DESCRIPTION OF PLATES.

Plate III. Details of structure of *Erinaceus pictus*, Stoliczka. *a.* upper view of skull : *b.* side view of skull : *c.* skull seen from below : *d.* side view of head : *e.* upper and under aspects of hind foot : *f.* fore foot seen from above and from below : *g.* side view of ear : *h.* side view of tail. All drawn natural size.

Plate IV. Details of structure of *Erinaceus grayi*, Bennett. *a.* upper view of skull : *b.* side view of skull : *c.* skull seen from below : *d.* side view of head : *e.* upper and under aspects of hind foot : *f.* fore foot seen from above and from below : *g.* side view of ear : *h.* side view of tail. All drawn natural size.

Plate V. Details of structure of *Erinaceus blanfordi*, n.s. *a.* upper view of skull : *b.* side view of skull : *c.* skull seen from below : *d.* side view of head : *e.* upper and under aspects of hind foot : *f.* fore foot seen from above and from below : *g.* side view of ear : *h.* side view of tail. All drawn natural size.

Plate V⁴. Skull of *Erinaceus micropus*, Blyth. *a.* upper view : *b.* side view : *c.* skull seen from below : Natural size. *d.* teeth of upper and lower jaws enlarged 2 diameters.

Skull of *Erinaceus jerdoni*, n.s. *e.* upper view of skull : *f.* side view : *g.* skull seen from below : Natural size. *h.* teeth of upper and lower jaws enlarged 2 diameters.

XIX.—*Description of a supposed new Hedgehog from Muscat in Arabia*.—

By W. T. BLANFORD, F. R. S., &c.

(Received and read Dec. 4th 1878.)

(With Plate IX.)

Amongst a collection of small mammals, birds and reptiles, sent to me some time since by Colonel Miles, the Political Agent at Muscat, are two specimens, one preserved in spirit, the other a skin, of a species of hedgehog which appears to me undescribed. It is somewhat intermediate in characters between the Indian *E. collaris*, and the Persian and Baluchistan *E. macracanthus*, and *E. megalotis*, being larger than the former and having longer spines, whilst it is inferior in both respects to the two latter. The following is a description of the new form.

ERINACEUS NIGER, sp. nov.

E. supra niger, subtus nigrescenti-fuscus, auriculis longiusculis, pilis sparsis griseis indutis, aculeis longiusculis, apices versus nigris, in medio albis, ad basin fuscis. Long. tota 6—7, auriculi 1.6, plantæ 1.25 poll. angl.

HAB. Juxta Muscat in Arabia.

The description is chiefly taken from the specimen in spirit, a female. The size is moderate, exceeding that of *E. collaris*, but apparently inferior to *E. europæus*. The colour is black above, the white ring on the spines being very inconspicuous, the face is sooty black with a few gray hairs interspersed, the ears are grey. On the lower parts and limbs all the hairs are sooty or blackish brown.

The feet are of moderate size, not so broad as in *E. grayi*, nor short as in *E. micropus*, but resembling those of *E. collaris* in form, and thinly clad with hair above. Five claws on all feet, the inner claw on the hind feet much smaller than the others.

The ears are long, not very broad, rounded at the end, thinly clad outside and near the margin inside with short whitish hairs: there are longer white hairs at the base of the anterior inner margin, and longer blackish hair near the base in front and behind.

Spines long, one inch to one and a quarter in length on the hinder part of the back. In the spirit specimen, a female, none exceed 1.1 inches; in the dried skin some are nearly 1½ inches long. The spines commence on the forehead inside of each ear, leaving a space free from spines in the middle, running back for about an inch. All are black at the points for half an inch, then white for about ¼ inch, then dusky to near the base where they are

rather paler. Each spine is surrounded by about 24 to 28 longitudinal grooves, the ridges between the grooves being closely tuberculate.

The following are measurements of the specimen in spirit, an adult female. Males are probably rather larger. The length, owing to contraction, is somewhat less than that of a fresh specimen would be—

Length from nose to anus,	5.5
Ditto of tail,	0.9
<hr/>	
Total,	6.4
Length of ear from orifice,	1.6
Ditto ditto outside,	1.35
Breadth of ear,	0.9
Length of palma without claws,	0.9
Ditto planta ditto,	1.25

The skull of the same specimen is rather narrower than that of *E. colaris*, and has a longer muzzle. The following are measurements:

	in
Length from occipital plane to end of premaxillaries, ...	1.9
Ditto from lower margin of <i>foramen magnum</i> to ditto, ...	1.78
Ditto of bony palate from opening of posterior nares, ...	1.05
Breadth across zygomatic arches,	0.98
Breadth of frontal region between orbits,	0.45
Ditto nasal bones,	0.13
Length of nasal suture,	0.56
Ditto of mandible,	1.42
Height of ditto about,	0.65

Description of Plate.

- Fig. 1. Head of *Erinaceus niger*.
 2. Fore foot of ditto.
 3. Hind foot of ditto.
 4, 5, 6. Skull of ditto.



XX.—On *Arvicola indica*, Gray, and its relations to the Sub-Genus *Nesokia*, with a description of the species of *Nesokia*.—By J. ANDERSON, M. D., Superintendent of the Indian Museum, and Professor of Comparative Anatomy, Medical College.

(Read 4th Dec. 1878.)

(With Plates XIII and XIV.)

In Gray and Hardwicke's Illustrations of Indian Zoology there is a representation of a rodent,* "The Indian Field-Mouse," *Arvicola indica*, Gray, bearing the date 1st May, 1829. This drawing is unaccompanied by any information regarding the locality from whence the animal was obtained. It represents a rat with a short bluff head; with moderately-sized, semi-nude ears; sparsely clad feet with rather long claws, and a naked tail shorter than the length of the body and head. The eye is figured large. The general colour is a pale sandy brown, with interspersed longer hairs.

In the Proceedings of the Zoological Society for 1835, p. 108, it is recorded that Dr. Gray on exhibiting some rats and mice collected by Mr., now Sir Walter, Elliot, in the Southern Mahratta country, took occasion to point out that the so-called *Arvicola indica* was really a true *Mus*. In 1837† Dr. Gray in referring to the Genus *Mus*, as understood by him, stated that "the *Mus giganteus*, Hardwicke, may be regarded as the type, to which may be added the two following new Indian species which have the tail shorter than the body and the fur with scattered bristles," and these species were *Mus rufescens*, Gray, (House-rat), and *Mus kok*. The latter he considered to be identical with *Arvicola indica*. Dr. Gray, holding this view regarding the identity of the animal figured in the Ill. Ind. Zool. with that of the rat sent by Elliot from Madras, under the Canarese name of *Kok*, re-named it, adopting the native name, *kok*, for the species. The *Mus kok*, afterwards described by Elliot as *Mus providens*, appears to me, however, to be distinct from the animal originally figured as *A. indica*.

In the same contribution, Dr. Gray described a rodent with "the cutting teeth, large, smooth, yellow and flat in front" under the name of *Mus hardwickii*. He compared it to *Mus kok*, that is, to the Madras rat which, he stated, it very much resembled, "but the skull is much wider and stronger and rather larger, and the cutting teeth are nearly twice as wide and are flat in front. The grinders are very little larger than those of that species."

* Vol. I, Plate XI, Mamm. 1832.

† Mag. Nat. Hist. (Charlesworth) Vol. I, 1837, p. 585.

In 1842,* Dr. Gray, selecting *Mus hardwickii* as his type, described the genus *Nesokia*, characterizing it thus, "cutting teeth very large, flat in front and smooth; grinders 3·3; front upper large with three cross ridges; the middle oblong, and the hinder much narrowed behind, each with two cross ridges; the front lower grinder larger, narrowed in front with three cross ridges; hinder each with two ridges, the hindermost smallest, rather narrowed behind: tail short, thick, with whorls of scales and scattered bristles: toes 4—5, moderate, the three middle sub-equal, long, the outer moderate: claws small, compressed: front thumb tubercular, with a rudimentary claw: ears moderate, naked." "This genus," Dr. Gray states, "is easily known from the rats (*Mus*) by the large size of the cutting teeth and the shortness of the tail: it appears," he continues, "to be intermediate between the Rats and *Rhizomys*."

In 1839,† Sir Walter Elliot described the afore-mentioned rat from Southern India under the name of *Mus (Neotoma) providens*, identifying it with the *Mus indicus*, Geoff. and the *Arvicola indica*, Gray, mentioning its Canarese name *Kok* or *Koku*, but his identification of it with *M. indicus* Geoff. was erroneous, as *Mus providens* is undoubtedly a *Nesokia*. Prof. A. Milne-Edwards, who has kindly examined for me the type specimen of *M. indicus*, Geoff. in the Paris Museum, informs me that it is very nearly allied to *Mus decumanus*, and that, although it is a little smaller, its teeth have the same conformation; and he further observes that *Mus indicus* is perfectly different from the animal figured by Peters under the name of *Spalacomys indicus*. *Mus providens*, however, has a skull like that of *S. indicus*, as I have satisfied myself by the examination of the skulls of two of Sir Walter Elliot's specimens.

Sir W. Elliot, in considering *Mus providens* as identical with *Arvicola indica*, Gray, lends the weight of his authority to the view that I have been led to adopt regarding *Arvicola indica*, because there can be no doubt that they both belong to one sub-generic type of *Mus*.

On referring to the list of Mammalia in the British Museum, published in 1848, three specimens of a rat are mentioned under the name of *Mus kok*‡ from Madras, and presented to the British Museum by Sir W. Elliot, and in the Introduction to his List of Mammalia§ 1843, Dr. Gray states that the *Mus kok* and some other species of rats (*Mus rufescens*, &c.) described in the Magazine|| of Natural History, 1837, were founded on specimens sent by Sir Walter Elliot, and that they were au-

* Ann. and Mag. Nat. Hist., Vol. X, 1842, p. 264.

† Madr. Journ. Lit. and Sc., Vol. X, 1839, p. 209.

‡ *l. c.*, p. 110.

§ *Op. cit.*, 1843, p. vii.

|| *l. c.*

thentic specimens of the species described by Elliot in the *Madras Journal of Literature and Science*.^{*} There can therefore be no doubt of the identity of *Mus kok* with *Mus providens*, and that the types, as stated in the 'List of Mammalia,' on the authority of Elliot, were from cultivated plains in the Madras Presidency, and from Madras itself. The figure of *Arvicola indica*, fortunately bearing the date, 1st May 1829, renders it impossible that any of Elliot's specimens could have contributed the type of that species, and, moreover, in the Proceedings of the Zoological Society of 1835, it is stated that it was figured from General Hardwicke's drawings.

In the 'List of Mammalia,' there is no specimen under *M. kok*, of which *Arvicola indica* was regarded by Dr. Gray as a synonym, that could have formed the type of the latter, as all the specimens of *M. kok* that have been mentioned were, with one exception, received from Sir W. Elliot. The exception is described as (c) "a small rat with a very long tail: India: from Dr. Smut's Collection." A very long tail would seem to be sufficient evidence that this was neither *M. kok* nor *Arvicola indica*. On again turning to the 'List of Mammalia,' we find that the type of *Nesokia hardwickii* was presented by General Hardwicke, and in connection with this it is noteworthy that animals from the North-West Provinces of India corresponding to the description of that species are remarkably like the drawing of *Arvicola indica*. Moreover, Blyth states that there is no rat in Bengal, nor apparently in Madras, corresponding to that figure, and by extensive research, I can confirm this statement.

In the Catalogue of the Specimens and Drawings of Mammalia and Birds of Nepal and Tibet, presented by B. H. Hodgson to the British Museum (1846), the *Kok*, *M. providens*, is assigned to *Nesokia*, a course which Blyth himself followed in his Memoir on the Rats and Mice of India and in his Catalogue of Mammals.

In 1842, Sir Walter Elliot presented two stuffed specimens of *Mus providens* = *M. kok*, Gray, to the Museum of the Asiatic Society of Bengal and these specimens still exist in the Indian Museum. They apparently belong to the variety found in the red soil, and which Elliot says is much redder than the common *Koku* of the black land, and they are quite distinct from *M. (N.) hardwickii*.

On a review of these circumstances, I am disposed to make the suggestion that the rat figured as *Arvicola indica*, and which Gray considered to be the *Mus indicus* of Geoffroy, is in reality the rat described by him, first under the name of *Mus hardwickii*, and afterwards as *Nesokia hardwickii*; and in connection with this view of the question, it is important to bear in mind that the figure of *Arvicola indica* was received from

General Hardwicke who afterwards, in presenting to the British Museum the type of Gray's *Mus (Nesokia) hardwickii*, presented a rat agreeing with the figure of *Arvicola indica*. The type of *Mus indicus* with which Gray believed his *Arvicola indica* to be specifically identical was from Pondicherry, and as has already been stated, it is a true rat allied to *M. decumanus*, and perfectly distinct from the animal figured under the name of *A. indica*, but, moreover, no rat has been obtained at Pondicherry at all corresponding specifically to the *Mus (Nesokia) hardwickii* with which the figure of *Arvicola indica* agrees.

The specimens of *Mus providens* in the Calcutta Museum are distinguished from *Mus (Nesokia) hardwickii* by their much narrower incisors, smaller molars, and by a long but narrow anterior palatine foramen, an opening which is very short in *Mus (Nesokia) hardwickii*, as is seen in Peters' characteristic figure of the so-called *Spalacomys indicus*,* but the form of the skull is the same; both differing in the same respects from *Mus*. I have had the Madras rat alive† and have observed that it has the deep and rather short muzzle of *Nesokia*, with incisors broader than those of ordinary rats, and with the molars, when worn down, having the general characters of *Nesokia*. These rats, coming as they do from Southern India, agree externally with the types of *M. providens*, and have similar short *Nesokian* skulls.

In Lower Bengal, there is a burrowing rat, a great pest in gardens, in which it constructs numerous tortuous passages, some comparatively superficial, and others at times very deep, and throws up heaps resembling mole hills. It is closely allied to *Mus providens*, but differs from it in its somewhat greater size, and in other slight details, afterwards to be noticed. This is the rat which Blyth incorrectly identified with *Mus indicus*, Geoff., and with which he also wrongly identified *Arvicola indica*, *Mus huttoni*, Blyth, *M. rattoides*, Hodgson, *Mus pyctoris*, Hodgson, and *Mus dubius*, Kelaart, but which is perfectly distinct from *Mus (Nesokia) hardwickii* which also differs from *M. huttoni*. It appears probable that this is the rat also figured in the Ill. Ind. Zool. Vol. II, pl. 21, under the name of *Arvicola bengalensis*, but which was never described. This being the case, the Bengal form must be named, whilst *Mus (N.) hardwickii* will stand for the rat originally described as *Arvicola indica*, and afterwards as *Nesokia hardwickii*; the original of the figure of *A. indica* being probably the type itself of *Mus hardwickii*, whereas *M. (N.) providens* will stand for the Southern form first described by Gray under the barbarous name of *M. kok*. In the Indian Museum, there are many rats in alcohol from Fatch-

* Abhand. der K. Akad. Wissensch. zu Berlin, 1840, p. 143, Taf. II, fig. 1.

† I may take the opportunity to record here that males and females of this rat escaped from confinement in the Calcutta Museum.

garh, presented by the late Mr. Andrew Anderson, which yield skulls the exact counterpart of the skull figured by Peters as *Spalacomys indicus*, and these rats agree with the figure of *A. indica*, and with the description of *Nesokia hardwickii*. Hodgson described, in 1846, a rat from Nepal which he called *Mus hydrophilus** and which Gray first regarded as an *Arvicola*, and afterwards as a *Nesokia*. He described it as characterised by its small ears, hardly above one-third the length of the head, also by its short tail "and by its fine and short pelage: the head he described as larger and the muzzle thicker than in the common land rats; 'above dusky brown; below and the limbs nearly white. Long piles inconspicuous. Snout to vent $3\frac{1}{2}$ inches; tail $2\frac{1}{2}$; head $1\frac{1}{2}$; ears $\frac{1}{8}$; palm $\frac{1}{8}$; planta $\frac{1}{8}$.' These characters would seem to indicate a rat allied to the so-called *Nesokia* or *Spalacomys*, Peters, but I hesitate to pronounce any decided opinion on the species. In connection with the name of *hydrophilus* given by Hodgson to this rat, I have observed that the common *Nesokia* of Lower Bengal, which I propose to name *Mus (N.) blythianus* after Blyth, who did so much to forward the progress of Natural History in India and to enlarge our knowledge of this group, manifests a remarkable capacity, for a rat of its type, to take to water, when hard-pressed. Its burrows are frequently constructed on the banks of tanks in Lower Bengal, and when the rats are being dug out, they will freely take to the water, if that is their only way of escape, and swim considerable distances. To test this aquatic power, I had two rats placed in a large wire bird-cage, and the cage partially submerged. If the rats, when in those circumstances, were much annoyed, they immediately dived to the bottom of the cage, where they could be observed running about under water. I also had them removed from the cage, and let loose in the large sheet of water in the Zoological Gardens, between the two iron bridges. When let loose at the bank, and an attempt was made to catch them, they immediately dived, and the stronger of the two did not appear at the surface for some time, when it was observed at a considerable distance from the bank, making for the opposite side.

I have already referred to the name given by Elliot to the allied form from Madras, viz., *M. providens*. He records of it that it stores up large quantities of grain during harvest. The natives of Bengal ascribe a similar habit to *M. (N.) blythianus*, and it has been stated to me that sometimes considerable quantities of grain may be found in a burrow, and that the natives being aware of this habit make raids on these murine granaries.

With reference to the characters of the genus *Nesokia*, Gray, the examination of a large series of skulls of *M. hardwickii* and of the other species shows that the dental features selected by Gray are essentially

* Ann. and Mag. Nat. Hist. Vol. XV, 1845, p. 267; Cat. Sp. and Draw. Mamm. &c. Hodgson, Nepal, Coll. Brit. Museum, 1846, p. 19; l. c. 1863, new ed., p. 10.

those of worn teeth, and that they do not contain the characters of the dentition as seen in the teeth before they are worn. In the latter condition, each of the three laminæ of the first upper molar presents a large central cusp, and a much smaller or even minute cusp on either of its sides, resulting as it were from the sinuous characters of each lamina of the tooth. In true mice and ordinary rats, the laminæ are transversely more sinuous and smaller, whereas in *Nesokia* they are large and transverse without any marked sinuosity, in the more typical forms. In the second upper molar, there are only two laminæ, the first being abortive and only represented by a small isolated cusp attached to the anterior face of the inner cusp or fold of the first of the two laminæ, which is exactly the same arrangement as in *Mus*. The last molar, except in having its laminæ more regularly transverse than in *Mus*, resembles the same tooth in this latter genus. In the lower jaw, there is the same regularly transverse character in the larger laminæ as compared with *Mus*, but all the cusps are the same. In the large rats of the type of *M. giganteus*, Hardwicke, the teeth conform more to the type characteristic of the ordinary rats and mice, the laminæ, however, being relatively larger than in *Mus* and less sinuous, but taking the dentition as a whole, in connection with the form of the skull, these large rats are more closely allied to *Nesokia* than to the true rats, an opinion which was first held by Sir Walter Elliot.*

The incisor teeth of a *Nesokia* are always broader than those of an ordinary rat, and in this respect are more chisel-shaped, but the incisor teeth of the large rats such as *M. giganteus* are also proportionally broader than those of ordinary rats.

In the adult animal, such as that figured by Prof. Peters, the laminæ are very regularly transversely oblong without any trace of such cusps as those I have described; and in old individuals of the larger rats, such as *M. giganteus*, the teeth I have observed to be worn down, much in the same way as in the so-called *Nesokia* = *Spalacomys*. Considering these facts, it does not appear that the genus *Nesokia* has any ground to recognition on characters derived from the dentition. The points in which the skulls of rats referable to the type of *M. (Nesokia) hardwickii*, Gray, (*Spalacomys indica*, Peters,) differ from those of the ordinary rats and mice are, on the other hand, much more pronounced than any difference in their dentition. The skull of *Nesokia* is a much broader and shorter skull with a short stout muzzle and expanded zygomata. The brain case is much shorter and broader than that of any member of the genus *Mus*. The temporo-parietal ridges also are proportionally nearer each other than in *Mus*, and the upper surface of the parietals is more flattened. The anterior palatine foramina are much

* Madr. Journ. Lit. and Sc., Vol. X, p. 209. Sir W. Elliot erroneously regarded *M. providens* and *M. giganteus* as belonging to the genus *Neotoma*.

more closed than in ordinary rats and mice, and in some of the more typical *Nesokia*, such as *M. (N.) hardwickii*, they are almost closed. There is also this further difference, that the palate of *Mus-Nesokia* contracts more anteriorly than in *Mus*, and is always proportionally narrower, with a much shorter edentulous interspace behind the last molar than in *Mus*. In the larger rats, such as *M. giganteus*, the posterior portion of the palate, in this respect, corresponds to *Mus-Nesokia*, and the features of the palate generally are more *Mus-Nesokian*, than those of true *Mus*. The palate also of *Mus-Nesokia* is marked by two somewhat pronounced longitudinal furrows which are the backward prolongations of the anterior palatine foramina. These grooves, near their hinder extremities, have the posterior palatine foramina lying in their course, and beyond them they are prolonged over the posterior margin of the palatines where they nearly constitute a closed canal by the inward projection of the inner palatine border of the maxilla and the somewhat thickened and anteriorly recurved posterior margin of the palatines. This arrangement is seen to occur only in a very feeble degree in ordinary rats and mice which, however, have not, as a rule, any thickening of the hinder margin of the palatines. Like the majority of thoroughly burrowing rodents, the tympanics are relatively much larger than in the ordinary rats. The large rats (*M. giganteus*) have the palatine features and the tympanics of *Mus-Nesokia*. These giant rats have rather more elongated skulls than the more typical *Nesokians* and, in this respect, they serve to connect the latter with the generality of mice and rats, but in their other features they more resemble *Mus-Nesokia* than *Mus*. I would therefore regard them as constituting a section of the sub-genus *Nesokia*. This view was first put forward by Sir Walter Elliot, so long ago as 1839, and Blyth agreed with him in regarding the affinities manifested by the great bandicoot rats as thoroughly *Nesokian*, and in the propriety of separating all of these *Nesokian* species from the typical forms of mice.

After a careful consideration of the characters which these various species display, it appears that this sub-genus of *Mus* may be conveniently divided into three sections; 1st, one section containing such forms as *Mus (Nesokia) hardwickii*, *M. (N.) huttoni*, *M. (N.) scullyi*, the more typical species of *Nesokia*, all characterised by broad incisors regularly laminated, large molars and small anterior palatine foramina, with tails considerably shorter than the body; and the females possessing only 4 pairs of mammary teats, two inguinal, one axillary and one pectoral: 2nd, another section comprising *M. (N.) providens*, *M. (N.) blythianus (n. s.)* and *M. (N.) barclayanus (n. s.)*, distinguished by somewhat narrower incisors, smaller and less regularly transversely laminated molars, more open anterior palatine foramina and longer tails; with the females possessing as many as even 7 to 9 pairs of

mammary teats*: and, lastly, a third division containing *M. (N.) giganteus* and *M. (N.) elliotanus*, (n.s.) the so-called bandicoot rats, with longer skulls, broad incisors, with molars of the type of the second section, but proportionally somewhat larger with less wavy laminae, longer anterior palatine foramina and tails nearly equalling the length of the body and head. I have largely collected rats for the Indian Museum from all parts of India, and out of the materials brought together I am enabled to determine the following species belonging to the sub-genus *Nesokia*.

1st Section.

MUS. (NESOKIA) HARDWICKII, Gray.

? *Arvicola indica*, Gray, Gray and Hardw., Ill. Ind. Zool., Vol. I, 1832, Pl. XI.

Mus. hardwickii, Gray, Mag. Nat. Hist. (Charlesworth), Vol. 1, 1837, p. 585.

Nesokia hardwickii, Gray, Ann. and Mag. Nat. Hist., Vol. X, 1842, p. 265, List Mamm. of 1843, p. 113; Jerdon, Mamm. Ind. 1867, p. 190.

? *Mus hydrophilus*, Hodgson, Ann. and Mag. Nat. Hist., Vol. XV, 1843, p. 267.

? *Mus pyctoris*, Hodgson, Ann. and Mag. Nat. Hist., Vol. XV, 1845, p. 267.

Nesokia griffithii, Horsfd., Cat. Mamm. East Ind. As. Mus., 1851, p. 145.

Spalacomys indica, Peters, Abhand. der K. Akad. Wissensch. zu Berlin, 1860, p. 143, Taf. IV, fig. 1.

The head short and bluff, much shorter and broader than in *M. (N.) providens* and *M. (N.) blythianus*; the muzzle broad and deep, and in these respects it resembles (*N.*) *huttoni*. The eye moderately large and situated about half way between the ear and the end of the muzzle. Ears not large, smaller than in these other two species, rounded, seminude, but clad with minute hairs. Tail variable, but much shorter than in *M. (N.) providens*, and *M. (N.) blythianus*, seldom exceeding the distance between the vent and the middle of the neck, but shorter than in *M. (N.) huttoni*: ringed, nearly nude, less clad than in *M. (N.) providens* and *M. (N.) blythianus*, with minute hairs. Feet well developed, smaller than in *M. (N.) huttoni*; claws moderately long; the upper surface of the feet sparsely clad.

The fur is generally soft and moderately long, but not so silky as *M. (N.) huttoni*: it varies however in this respect and is sometimes somewhat

* Hodgson described a rat, as *M. plurimammis* from Nepal and the Terai, which, from the description and the proportional length of its tail appears to be an allied species.

harsh. The pelage, as in the other species, consists of three kinds of hairs, short under-lying fur, and ordinary hairs, intermixed among which, especially on the dorsal and sacral regions, are numerous long black hairs which project a long way beyond the fur, as in *M. (N.) blythianus*,* but not to the same extent. The general colour of the animal on the upper parts is sandy brown or fawn, paler on the sides, and dusky grey with a tinge of yellowish rufous on the under-surface. The muzzle, feet and tail are flesh-coloured, and the ears are of the same colour but somewhat darker.

Mr. Blanford† has pointed out that *M. (N.) hardwickii* is a much larger animal than *M. (N.) huttoni*. The measurements of the largest male, *M. (N.) huttoni*, mentioned by him are as follows, taken from the fresh animal, viz. :—

Length of body and head,.....	7"
Length of tail,	4".6
Length of hind foot,	1".6

whereas the largest male, out of an extensive series of this rat in alcohol, collected by the late Mr. Andrew Anderson at Fatehgarh, gives the following dimensions :

Length of body and head,	7".85
„ of tail,.....	4".60
„ of hind foot,	1".27

Besides differing in size these species would appear also to differ in the relative proportions of the tail and the feet, the latter being somewhat larger in *M. (N.) huttoni*, than in *M. (N.) hardwickii*. The *M. (N.) griffithi* of Horsfield in its proportion agrees with this species. If two female examples of the two species from the same localities are compared, we have similar results, thus—

	<i>M. (N.) huttoni.</i>	<i>M. (N.) hardwickii.</i>
	♀	♀
Length of body and head,	6.50	6".45
„ of tail,.....	4.55	4".15
„ of hind foot,	1.43	1".25

I am indebted to Dr. Dobson for having compared the foregoing male specimen from Fatehgarh with the type in the British Museum, with which he pronounces it to agree.

The skulls, however, are remarkably alike and the only differences I can detect are, that the molar teeth of animals by their other characters referable to *M. (N.) huttoni*, are somewhat larger than those of *M. (N.) hardwickii*, the anterior palatine foramina of the latter being a little shorter

* These piles are not shown in the figure of the species in the Zoology of Persia.

† Zool. of Persia, p. 59.

than that of the former, but in both they are much closed and their characters are well shewn in the female skull of this species figured by Prof. Peters. This foramen, however, is subject to a slight variation in the degree to which it is closed. The skulls of both species agree in having an expanded surface to the malar process of the maxillary.

Mr. Andrew Anderson forwarded to the Indian Museum from Fatehgarh specimens agreeing with the example that has been compared with the type of the species and which also conforms to Hodgson's description of *Mus. pyctoris*, the type of which, however, Dr. Dobson informs me, he has not been able to find either in the British Museum or in the India Museum.

This species in the proportion of its tail, in the colour of its pelage, in the flesh-coloured character of its several parts, such as its feet and tail, and in the form of its head so closely approaches the figure of the animal depicted as *Arvicola indica*, that I hesitate only with a meagre doubt to regard it as identical with the animal figured under that name. The only dubiety I have in expressing this opinion arises from the affinity that exists between *M. (N.) hardwickii*, and the burrowing rodent described by Blyth as *M. (N.) huttoni*.

This species is very prevalent about Fatehgarh in the North-Western Provinces of India, and if *M. griffithi* is correctly identified with it, the species would appear to extend into Afghanistan, to the district about Quettah.

MUS (NESOKIA) HUTTONI.

Mus huttoni, Blyth, Jour. As. Soc. Beng., Vol. XV., 1846, p. 139.

Nesokia indica, Blyth, Jour. As. Soc. Bengal, Vol. XXXII, 1863, p. 328, *partim*: *id.* Cat. Mamm. As. Soc. Mus., 1863, p. 112, *partim*.

Nesokia huttoni, Blanford, Zool. of Persia, 1876, p. 59, P. VI, fig. 1, et cranium, figs. 1 and 2, p. 60.

Head and general form of the animal the same as in *M. (N.) hardwickii*, but with larger feet and a somewhat longer tail. Fur also as in that species, but more soft and silky and paler fawn-coloured, the under parts being pale hoary, sometimes tinged with yellowish and ferruginous. The ears are round and about the same dimensions as in *M. (N.) hardwickii*, and very sparsely clad with minute hairs. The feet sparsely covered with short whitish hairs and the tail also almost nude. The nose and feet are flesh-coloured, but the tail and ears are darker and brownish.

	♂	♀
Length of body and head,*	7"	6".7
„ of tail,	4".6	4".9
„ of hind feet,	1".6	1".5

* These measurements are taken from Mr. Blanford's "Persia," and are those of fresh specimens.

The general characters of the skull I have already indicated under *M. (N.) hardwickii*.

Mr. Blanford states that this field-rat has only 3 pairs of mammae, but in a female collected by him at Kalagán, Balúchistán, I observe that it has the same number of mammae as the female of *M. (N.) hardwickii*, viz., 8, two inguinal pairs, one axillary pair, and one pectoral pair as in that species. Mr. Blanford probably overlooked the axillary mammae which occur also in *M. (N.) providens*, and *M. (N.) blythianus*, and in the ordinary rats, such as *M. decumanus*.

The Indian Museum has received this species from Umballa, where it was obtained by the late Lieut.-Col. Tytler; from Kalagán in Balúchistán from Mr. Blanford, who has also presented examples from Sháhbandar and Khipra, Sind; and from Karachi examples have been received from Mr. J. A. Murray of the Municipal Museum of that town.

Examples have also been quite recently sent to the Indian Museum from Dakka, Afghanistan, by that observant naturalist Dr. Arthur Barclay. He states "that this species occurs in large numbers all about that Fort, which is at a low elevation, being only a little above Peshawar. The soil is loose and very fine, almost like exceedingly fine sand. The holes of this rat do not run deep but ramify horizontally, just below the surface of the ground. It throws out a mound of earth at the exit of the hole. I have never seen these rats out of their dens during the day, but frequently during my evening walk I have watched them throwing out earth. The mouth of the hole is usually kept shut up with earth."

M. (NESOKIA) SCULLYI.

Nesokia scullyi, J. Wood-Mason, Proc. As. Soc. Beng., 1876, p. 80.

Form of body and head the same as in *M. (N.) hardwickii*, but distinguished from it and from *M. (N.) huttoni*, to both of which it is closely allied, by its much larger feet, the hinder pair of which in an animal with the body and head 6"·6 long, the hind foot and claws measure 1"·72, whereas in *M. (N.) hardwickii* and *M. (N.) huttoni*, in animals of the same dimension the feet measure respectively 1"·26 and 1"·43. The tail is longer than in *M. (N.) hardwickii*, and in its proportions it more resembles the tail of *M. (N.) huttoni*. The fur also is longer and more silky than the fur of the two foregoing species, but in this respect it is approached by *M. (N.) huttoni*. The tail is stated by Mr. Wood-Mason to be without a single hair, but in the type I observe that it is very sparsely covered with hairs, to the tip. The feet are clad with short brown hairs, but to a less extent than in any of the other species.

The fur is a slightly paler fawn than that of *M. (N.) huttoni*, the long piles being white tipped. The sides are still paler, and the under surface is

a pale grey, tinged with yellowish. The whiskers are black, tipped with white. The ears are short, scarcely appearing above the fur, and they are almost nude, but sparsely clad as in the other species. The feet and claws flesh-coloured.

The skull has a broader muzzle than the skull of *M. (N.) huttoni*, than which it is somewhat larger, exceeding also the size of the skull of *M. (N.) hardwickii*. It also differs from the skull of *M. (N.) huttoni*, in its greater supraorbital breadth and less expanded zygomatic. It has the expanded malar process of the maxillary as in *M. (N.) hardwickii* and *M. (N.) huttoni*, but to less extent than in the latter species, than which the lachrymal foramen is much smaller. Its molar teeth are also larger than in *M. (N.) huttoni*, and its anterior palatine foramina are more open. Dr. Scully gives the dimensions as follows: total length 11"·8, tail 5"·2, and the weight as 5·6 oz. The irides he states are dark brown.

This species was obtained by Dr. Scully at Sanju in Kashgaria and presented by him to the Indian Museum.

The Indian Museum has received from Muscat, Arabia, a young rat belonging to this sub-genus, of the following dimensions. Length of body and head 3"·35, tail 2"·30, hind foot 0"·93. Its ears are small and rounded, its tail is rather densely clad with short hairs. It is too young to indicate its species, but it is quite distinct from any of the field rats described in this article.

2nd Section.

MUS (NESOKIA) PROVIDENS.

Mus kok, Gray, Mag. Nat. Hist. (Charlesworth's), Vol. I, 1837, p. 585, *partim*, nec *Arvicola indica*, Gray; *id.* List of Mamm. B. M. 1843, *partim*; Kelaart, Prod. Faun. Zeyl. 1832, p. 66.

Mus (Neotoma) providens, Elliot, Mad. Jour. Lit. &c., Vol. X, 1839, p. 209, *partim*, nec *Mus indicus*, Geoff. St. Hil., nec *Arvicola indica*, Gray.

Mus (Nesokia) indicus, Blyth, Cat. Mamm. As. Soc. Mus., 1863, p. 112, *partim*, nec *Arvicola indica*, Gray, nec *M. huttoni*.

Nesokia indica, Blyth, Journ. As. Soc. Bengal, Vol. XXXII, 1863, p. 329, *partim*, nec *M. hardwickii*, nec *Mus indicus*, Geoff., St. Hil.; Jerdon Mammal of Ind. 1867, *partim*.

Mus hardwickii, Kelaart, Prod. Faun. Zeylanica, 1852, p. 65.

The head short and truncated, with a deep muzzle; the ears nearly round, the height equalling the distance between the tip of the muzzle and the eye, nearly nude, but sparsely covered with minute hairs. Eye moderately large, occupying about the middle of the interval between the tip of the snout and the ear. Feet well developed. Claws short and stout. The

tail nearly equals the length of the trunk and head, and is thus longer than in *M. (N.) blythianus*, seminude, ringed and with short brown bristly hairs around the margin of the annuli. Whiskers full and long.

The fur is rather harsh and long and consists as in the other species of three kinds, but the long piles are not numerous.

The general colour of the upper parts is brown, paler than in *M. (N.) blythianus*, with an intermixture of yellowish or fawn-coloured hairs as in that species, producing a varied hue of brown and yellow: the under parts are whitish with a yellowish tinge, and there are no brown or long hairs intermixed. There is a variety occurring in the red soil and which Elliot says is much redder* in colour than the common *Koku* of the dark land. The nose, ears and feet are dark flesh-coloured or brownish, and the feet are covered with short brown hairs. The claws are yellowish. The whiskers are black.

Sir Walter Elliot gives the following measurements of an old male: length of body 7 inches; of tail $6\frac{1}{2}$; total $13\frac{1}{2}$; of head $1\frac{1}{8}$; of ear $\frac{3}{8}$; of fore palm $\frac{1}{8}$; of hind palm $1\frac{1}{4}$; weight 6 oz. 5 drs "†

The skull is considerably smaller than that of *M. (N.) blythianus*, of the same age, from which it is also distinguished by its more outwardly arched malar process of the maxillary; by its considerably smaller teeth, and long, but less open, anterior palatine foramina. The brain case also is relatively shorter and more globular than that of *M. (N.) blythianus*. The total lengths of two female skulls of the same age of these species stand in the following relations to each other. *M. (N.) providens*, 1"·45. *M. (N.) blythianus*, 1"·67. Molar line in the former 0"·30, in the latter 0"·33. The upper surface of the skull in the fronto-nasal region is less arched in *M. (N.) providens*, than in *M. (N.) blythianus*. The incisors are brilliant orange, more so than in *M. (N.) blythianus*, but this is a variable character.

The external features which distinguish this from the nearly allied *M. (N.) blythianus* are its smaller size and slightly shorter head and muzzle, and somewhat smaller ears and longer tail, associated with a paler brown fur and fewer long piles.

This animal occurs in southern Western India and also in Ceylon. In the Indian Museum, there is one of Kelaart's specimens of *Mus dubius*, and which he afterwards considered to be *Nesokia hardwickii*, but its skull and features generally are those of this species.

This species produces from 8 to 10‡ at a birth. Elliot relates that this burrowing field-rat is largely eaten by the Wuddurs, or tank-diggers, who also

* It is a curious circumstance that the pelage of *M. (N.) blythianus*, becomes quite rufous in alcohol, and that stuffed specimens long exposed to light, change to the same hue, as do also stuffed examples of *M. (N.) providens*.

† l. c., p. 210.

‡ l. c., p. 210.

plunder its burrows for the grain that is stored up for its winter consumption, and he mentions that in favourable localities the Wuddurs find the grain in such quantities as to subsist almost entirely upon it, during that season of the year! Sir Walter Elliot has also described the burrows of this species, which apparently closely correspond to those of *M. (N.) blythianus*, and he states that a variety is said to frequent the banks of nullahs and to take to the water when pursued, but that these differ in no respect from the common kind—an exact parallel to what occurs also with the allied form *M. (N.) blythianus* found in Bengal.

MUS (NESOKIA) BLYTHIANUS, n. s.

? *Arvicola bengalensis*, Gray and Hardw., Ill. Ind. Zool., Vol. II, 1833-34, pl. 21, not described.

Mus (Nesokia) indicus, Blyth, Cat. Mamm. As. Soc. Mus, 1863, p. 112 *partim*, nec *M. indicus*, Geoffroy St. Hil.

Nesokia indica, Blyth, Journ. As. Soc. Beng., Vol. XXXII, 1863, p. 329, *partim*, nec *Mus indicus*, Geoffroy St. Hil.; Jerdon, Mamm. Ind. 1867 p. 187, *partim*, nec *M. indicus*, Geoffroy St. Hil.

Head moderately large, but the muzzle broad and deep compared with *Mus decumanus*. Ears rounded; about one half the length of the interval between their base anteriorly and the tip of the snout nearly nude, but sparsely covered with minute hairs. Eye moderately large, placed a little nearer the ear than towards the tip of the snout. Feet well developed, moderately large. Claws short and stout. The length of the tail somewhat variable, but rarely exceeding the length of the trunk, exclusive of the head. It is ringed and sparsely covered with short bristly hairs at the margins of the rings.

The fur is rather coarse and the piles are profusely intermixed among the pelage and project a long way beyond it. These long hairs are most numerous on the lumbar and sacral regions.

The general colour of the animal is dark brown with fleshy-coloured nose, ears and feet, the under-surface having a somewhat greyish tint approaching to hoary. Intermixed among the generally brown hairs of the upper parts, are numerous yellowish hairs producing a speckled appearance, and these yellow hairs give rise to a somewhat rufous tint in the brown colour. The under-surface is without any intermixture of brown and yellow hairs. The ears and upper surface of the feet and the tail are clad with short brown hairs. The whiskers are black.

Measurements in the flesh, of male and female.

	♂	♀
Length of body and head,.....	8".20	6".05
" " tail,	6".45	5".55
Total length,	14".65	11".60
Length of hind foot,	1".30	1".30
Height of ear,.....	0".83	0".75
Breadth of ear,	0".75	0".65

The females are distinguished by the presence of 8 pairs of mammary teats. Two in the inguinal region, four on the sides, one pair in the axilla and one pectoral pair.

The skull is distinguished from the skull of the nearly allied form *M. (N.) providens* by the characters already stated, and from the skull of *M. hardwickii* it differs in its considerably narrower incisors and smaller and more irregularly laminated molars, and by its long and open anterior palatine foramina. It is also a more arched skull. The incisor teeth are orange, occasionally brilliantly so, but generally white towards their tips, whilst in some these teeth are nearly white in both sexes, but the teeth of the males are usually the most coloured.

The nasals vary considerably in length and breadth. Compared with the skulls of ordinary mice, shortness of muzzle is one of its most distinguishing features, associated with expansion of the zygomata and general rotundity. The skull of the male is always considerably larger than that of the female. Among males found among the native huts, I have observed two types of skull, one larger than the typical form, but the animals in other respects were identical with other males conforming to the ordinary type of skull. I have never observed these more elongated skulls in females, but if they do occur I would be disposed to attribute the variation to inter-breeding with *Mus decumanus*.

The adult rat, in its external appearance, has a strong resemblance to *M. decumanus*, when the depth of its muzzle and longer tail are overlooked, and a superficial observer at first sight would be disposed to regard them as one and the same species.

It is distinguished from *M. (N.) hardwickii*, by its much longer tail, by its coarser and much darker pelage, narrower incisors and larger ears, and these features and its much smaller feet distinguish it from *M. (N.) scullyi*.

It is a larger animal than *M. (N.) providens*, than which it has somewhat larger ears, a larger head, and broader incisors.

The Indian Museum possesses examples of this species from Gházipur in the North-West of India, from Dacca, Cachar and Midnapore, and numerous specimens from Calcutta and its neighbourhood.

In Cachar specimens, the colour is somewhat darker.

This rat is very generally distributed over Lower Bengal, and from its abundance it becomes a nuisance in gardens, owing to the tortuous character of its burrows, and from the circumstance that they are generally only a few inches below ground, unless the animal happens to burrow on the bank of a tank when the burrow usually runs horizontally inwards. A burrow consists of a great number of short passages which run a short way and then stop, but I have been unable to detect that they are generally constructed on one plan. There is, of course, a continuous but tortuous principal passage from which the offshoots are given off, and the termination of the former, or it may be the end of one of the short passages, may be enlarged and contain a nest of leaves and grass. Other burrows are much simpler, consisting of only a few passages with one principal passage running right inwards for a long way, and these are generally constructed on the banks of tanks. From a nest such as that described I have removed as many as 10 young rats. Like *M. (N.) providens*, it is of a fierce disposition and utters a peculiar aspirant sound, grinding and rather knocking its teeth together at the same time, and erecting all its fur, more especially the long piles, and contracting its ears which, like the ears of rats generally, are capable of a folded contraction, about the middle of the conch.

I have already mentioned its aquatic habit and that of storing grain.

The Indian Museum, some years ago, received from Moulmoin, through the late Captain Hood, a nearly albino adolescent female *Nesokia* closely allied to this species and to *M. (N.) providens*, but as it is immature, and abnormal in colour, I hesitate to name it specifically. The following are its measurements:

Length of body and head,	6".70
„ of tail,	5".26
Total length,	11".96
Length of hind foot,.....	1".32
Height of ear,	0".75

The skull has the ordinary characters of this section of the Sub-genus, and manifests some affinities to *M. (N.) providens*, more especially in its anterior palatine foramina, which are narrower than in *M. (N.) blythianus*.

Hodgson has described a rat which is closely allied to this species, *viz.*, *M. (N.) plurimammis*.

MUS (NESOKIA) BARCLAYANUS, n. s.

Dr. Arthur Barclay of the Bengal Medical Service, obtained at Gúna, Central India, an adult male field rat which appeared at first sight to be a new generic type, judging from its external appearance only. Whilst it had the general form of *Nesokia* there was this remarkable feature that its ears

were nude and only projecting a very short way above the fur, while a broad white band ran from above the nose, through the eye, to the ear. I had the animal figured and afterwards killed, and on examining the skull there could be no doubt regarding the animal's affinities, and that it was closely allied to *Mus (Nesokia) blythianus*, having the same narrow incisors, compared with *M. (N.) hardwickii*, and the same small molars, with wide anterior palatine foramina.

The ears were nearly symmetrical on either side and, as already stated projected only a little above the fur. It seemed to me, however, that their short character was due to their having been artificially cut, as the margin of each ear was rounded and un haired. I was therefore disposed to conclude that this rat must have been once in confinement, probably on account of the curious sport of a white band from the nose through the eye, and that either to mark the animal so that it could always be recognised, or perhaps with the object of enhancing its value to the uninitiated, its ears had been cut. There could be no doubt but that it was a *Nesokia* allied to, but probably distinct from, *Mus (N.) blythianus*.

I was so convinced of this that I sent to the North-West for more specimens of these field rats, and to Mr. Whitwell of the Opium Department, Gházipur, I am indebted for a female field rat which appears to be a normal example of a species which was first made known by the sport which I have described.

The following is a description of this species :

Muzzle short and bluff, less so than in *M. (N.) hardwickii*, and slightly shorter than in *M. (N.) blythianus*. Ears moderately large and rounded. Forehead slightly arched. Tail exceeding the length of the trunk, but not equalling the length of the combined body and head : ringed and sparsely clad. Hind foot well developed. Piles moderately long. Fur not very soft, much coarser than in *M. (N.) huttoni*. General colour of upper parts brown or brownish, tending to silvery grey on the under surface. Feet and muzzle flesh-coloured ; hair brownish. Tail nearly black. Claws horny white.

Dimensions of male and female.

	♂	♀
Length of body and head,	8".70	7".75
„ of tail,	7".20	7".00
„ of hind foot,	1".39	1".33

The skull is considerably larger than that of *Mus (N.) blythianus*, relatively longer and more arched. There is not, however, very great difference in size between the teeth of this form and that of *M. (N.) blythianus*, and the anterior palatine foramina are much the same in both. The nasals are considerably relatively broader and larger than those of *Mus (N.)*

blythianus, but these bones appear to be subject to considerable variation in this group, and, in the female skull, they are much narrower than in the skull of the male.

In Sind, there is a field rat which corresponds in its general character to this species. The skull of a female from Khípra, Thar and Párkár District, Sind, has all the characters of the female from Gházipur with exactly similar nasals.

A very closely allied, if not identical rat to this, is found at Srinagar, Kashmir, and of which the Indian Museum has one example collected by Dr. Stoliczka.

Its skull exactly agrees with the skull of the male (see figure), except that its nasals are a little narrower. This Kashmir rat is a dark sandy brown above, with long black piles, especially on the lower portion of the back; the under surface of the animal being yellowish with an intermixture of dusky. The fur is coarse, resembling that of this species, of which the Kashmir rat is probably a local race.

This rat appears also to occur in the Purneah District, and in the Indian Museum there is a skull of a rat, marked Cachár, seemingly closely allied to this form.

3rd Section

MUS (NESOKIA) ELLIOTANUS, n. s.

Head short and deep; muzzle deep and broad; eye half way between ear and nose, moderately large; ears not large, rounded sparsely covered with short hairs. Feet large and well developed with strong claws and sparsely clad. Tail sparsely covered with short bristles on the margins of the annuli, and nearly equalling the length of the body and head.

Pelage coarse, with moderately long piles, most numerous on the back and over the rump. Vibrissæ moderately long.

General colour above, brown with intermixed yellowish or pale brown hairs, producing much the same colour as in *M. (N.) blythianus*, paler on the sides and passing into greyish on the under parts. Nose and feet flesh-coloured. Ears dark brown, tail blackish.

Measurements of 4 specimens.

	Calcutta.		Purneah.	
	♂	♂	♀ juv.	♀ juv.
Length of body and head,...	10".50	9".85	8".25	6".95
„ of tail,	5".80*	9".70	7".40	6".90
„ of hind foot,	2".28	2".28	2".04	1".83
Height of ear,	1".12	1".08	0".95	1".03

The skull of this species approaches in size the dimensions of the skull of such rats as *M. (N.) giganteus*, but in form it resembles the skull of

* Imperfect.

M. (N.) blythianus more than that of the former, being less elongated and with a shorter muzzle, with less breadth between the lachrymal foramina. The teeth have the same characters as in *M. (N.) blythianus*, but, of course, are very much larger. The nasals are moderately short and very different from the broad nasals of *M. (N.) giganteus*.

The total length of the skull of the largest male is 2.20 from the upper border of the foramen magnum to the end of the premaxillaries, with a maximum breadth of 1.27 across the zygomatic.

Mr. S. E. Peal has presented to the Indian Museum from Sibságar, Assam, a rat distinctly referable to this species, and I am indebted to Mr. W. T. Blanford for the opportunity to examine another example of this species from the Khási Hills.

In all of these skulls, the female as well as the male, the incisors are bright orange, but in the female somewhat paler, due to her youth or, it may be, sex, and with white tips as in the male Assam skull.

I obtained this rat first at Purneah and afterwards two specimens at Calcutta. The adult male of these two I obtained from a native who asserted that he found it in a palm tree, which I discredit. It is evidently a burrowing rat closely allied to *M. (N.) blythianus*. It would appear to be very rare about Calcutta, for I have not succeeded in obtaining more than two specimens, notwithstanding that I have made special efforts to obtain others. In all probability, the rats mentioned by Hardwicke as Calcutta bandicoots were large examples of *Mus decumanus*, which occasionally attains to a great size.

Blyth, in his Memoir on the Rats and Mice of India, remarked that *Nesokia indica* (= *Mus blythianus*) had not been seen from the eastward of the Bay of Bengal, though it was likely enough to occur in the dry climate of the region of the Upper Irawadi. Mr. Theobald in 1866*, in confirmation of this supposition of Blyth's, recorded the occurrence at Tonghoo, on the Sittang, of a rat which he referred to this sub-genus. The dimensions indicate an animal of about the same size as *M. (N.) elliotanus*, but distinguished from it at once by the different proportions of its tail and trunk. It is in all probability a new species.

MUS (NESOKIA) GIGANTEUS.

Mus giganteus, Hardwicke, Trans. Journ. Linn. Soc., Vol. VII, 1804, p. 306, Pl. 18; Desm. Mamm. 1822, p. 298; Brantz, Muizen, 1827, p. 101; Gray, Proc. Zoo. Soc. 1832, p. 40; Kelaart, Faunæ Zeylanicæ, 1852, p. 58.

Mus (Neotoma) giganteus, Elliot, Madr. Journ. Lit. and Sc., Vol. X, 1839, p. 209.

* Proc. As. Soc. Beng. p. 239.

Mus bandicota, Blyth, Cat. Mamm. As. Soc. Mus., 1863, p. 112; *id.* Journ. As. Soc. Bengal, Vol. XXXII, 1863, p. 333.

Pandi Koku, Telegu = Pig-rat, according to Elliot, *l. c.*, p. 209.

Nose somewhat pointed; muzzle moderately long and rather deep; eye considerably nearer to the ear than to the nose, moderately large. Ears somewhat large and rounded, nearly nude, but sparsely clad with short brown hairs. Tail broadly ringed, sparsely clad with short hairs and nearly equaling the length of the body and head. Feet well developed, sparsely clad on their upper surfaces with short hairs; claws not strong. Vibrissæ long, some of those of the moustache passing behind the ear.

Pelage coarse, consisting of three kinds of hairs, *viz.*, the underlying fur, the bristly hairs of the general pelage and the long coarse piles which are intermixed in great profusion among the fur of the back. These long piles are especially abundant on the lumbar and dorsal regions where they are very long, and being so numerous hide the general pelage lying below them and project out a long way beyond it. The piles are almost entirely absent from the sides of the animal and from the head and neck, but, beyond the latter region they rapidly increase in numbers and length. In the living animal, these piles are always as a rule erect.

The general colour of the animal is earthy brown with intermixed yellow hairs, paler on the sides, where the yellowish or grey hairs are more numerous, owing to the absence of the piles. The piles are so numerous on the back that that region is uniform dark brown, and this colour is prolonged along the back to the head. The under surface is dusky brown with a greyish tint. The limbs are brownish, and the nose, inside of the ear and the feet are flesh-coloured, the upper surface of the latter being sparsely covered with dark brown hairs. The tail is black.

This animal attains to a great size; the type having measured 18.25 inches in the length of its body and head, with a tail 13 inches long; but adult males are even larger than this.

The skull of this rat is much more elongated than the skull of *M. (N.) providens*, but it, as already stated, belongs to the same group, but is, of course, immensely larger, measuring 2".66 in length by 1".35 in maximum breadth across the zygomatic. It differs from the skull of the allied species from Lower Bengal and Assam in its slightly more elongated muzzle and very much larger nasals. The female has 12 mammae.

This species occurs in great numbers in the district around Gúna and, like its congener *M. (N.) blythianus*, it has the reputation of being a water rat. In the Manbhúm District it is not uncommon, but two specimens in the Indian Museum are much greyer than those from Bhádrachellum, south of the Godávari, presented by Mr. W. T. Blanford, and which

nearly resemble the bandicoot of Ceylon. The Manbhúm rats have many greyish piles interspersed among the dark brown hairs, but this seems to be only a local variation of no importance. Their skulls agree with the skulls of the bandicoots from Gúna, for which I am indebted to Dr. A. Barclay, and are not separable specifically from them. Although these Gúna rats and also the bandicoots from the south of the Godávri are the exact counterparts in external appearance of the Ceylon rats, the skulls of the latter have remarkably different nasals from the rats of Gúna and Manbhúm, being much narrower and more posteriorly pointed, and moreover the muzzle of the skull is narrower and not so long. Allowance, however, must be made for variation, especially in insular examples of a species, and I am, therefore, disposed to regard the foregoing differences observable in the species of the Ceylon bandicoots in this light.

Description of Plates.

Plate XIII, *Mus (N.) blythianus* : *a*, upper view of skull of a ♂ ; nat. size : *b*, under view of same skull : *c*, side view of same skull : *d*, teeth of right upper jaw and teeth of right lower jaw, enlarged

Mus (N.) providens : *e*, upper view of skull of *M. N. providens*, nat. size : *f*, under view of same skull : *g*, side view of same skull : *h*, teeth of right upper and lower jaws, enlarged.

Mus (N.) barclayanus : *i*, upper view of skull : *j*, under view of skull : *k*, side view of skull : *l*, teeth of right upper and lower jaws, enlarged.

Plate XIV, *Mus (N.) giganteus* : *a*, upper view of skull : *b*, under view of skull : *c*, side view of skull : *d*, 1, teeth of right upper jaw, enlarged : *d*, 2, teeth of right lower jaw, enlarged.

Mus (N.) elliotanus : *e*, upper view of skull : *f*, under view of skull : *g*, side view of skull : *h*, right upper and lower teeth, enlarged.



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E. Neale lith

Hansard imp

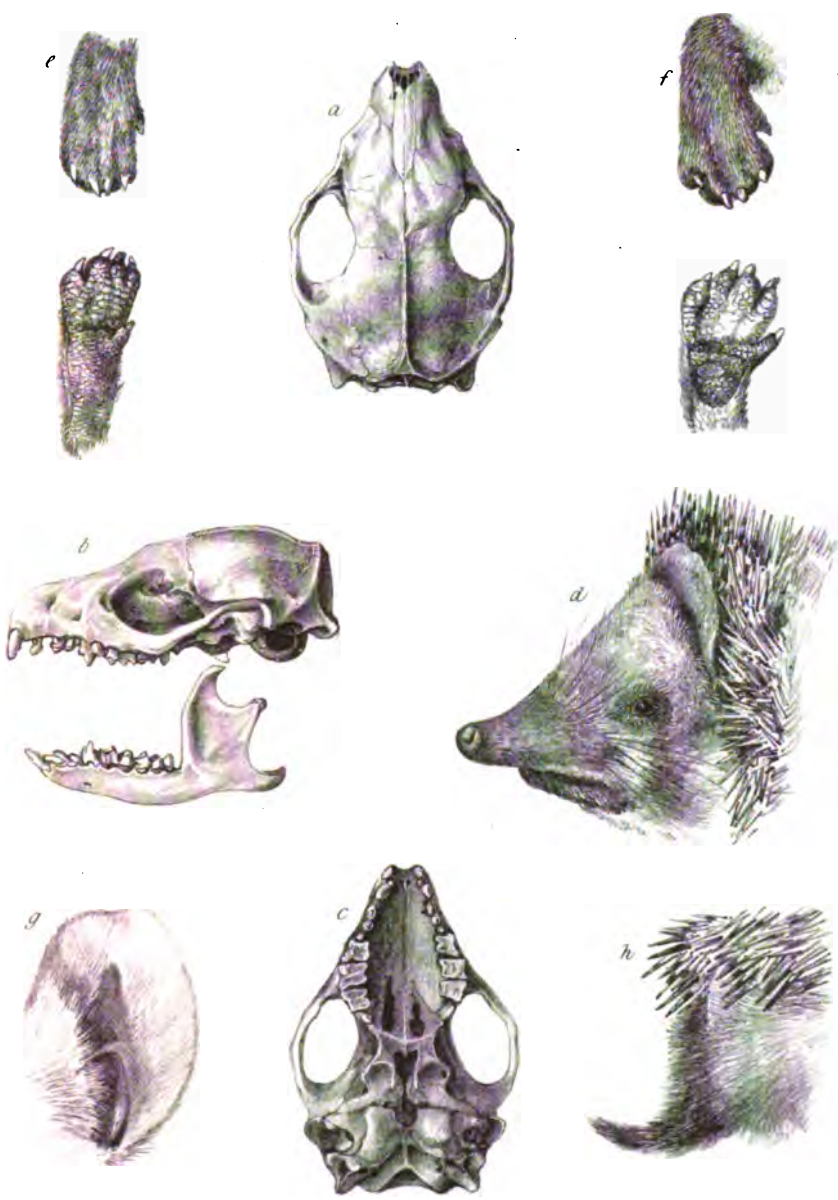
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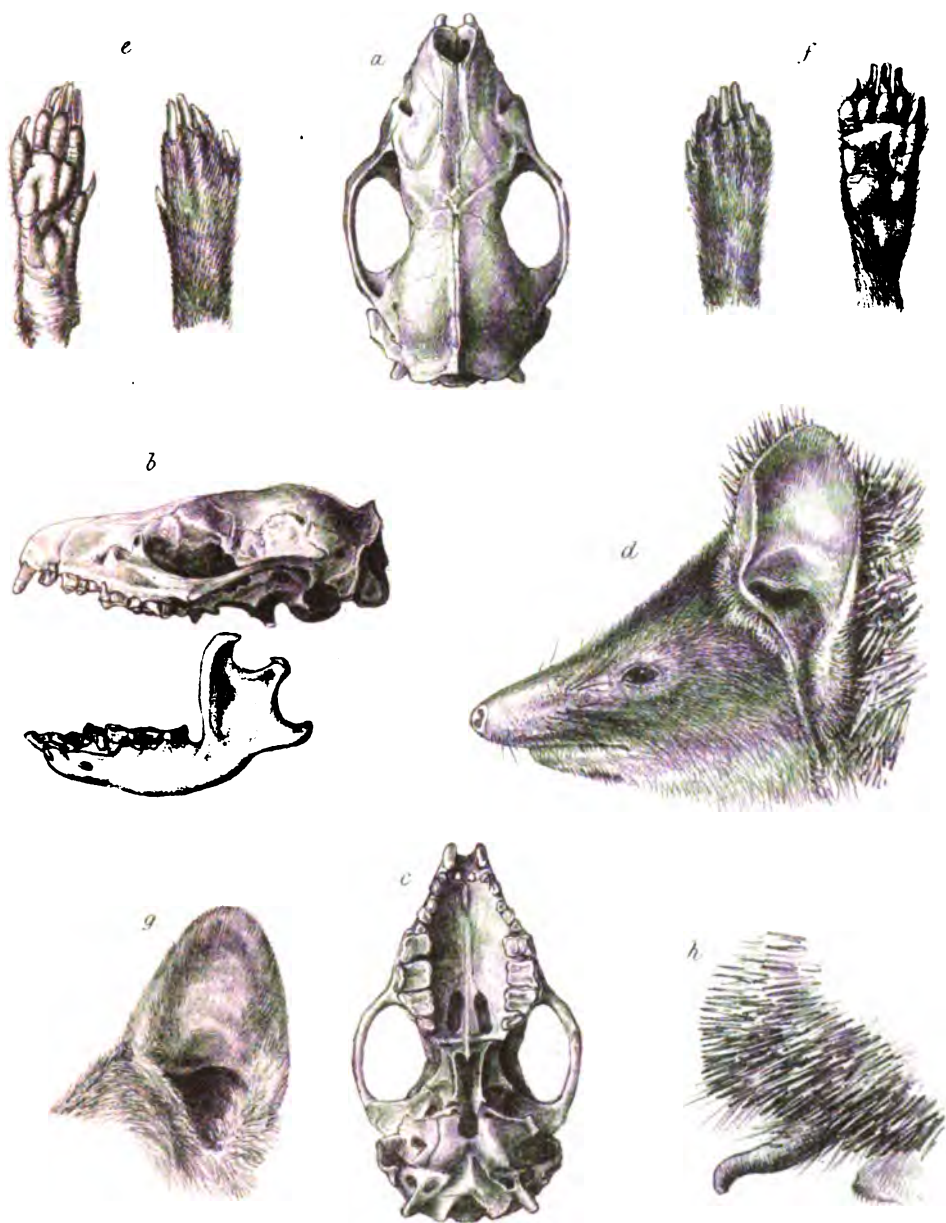


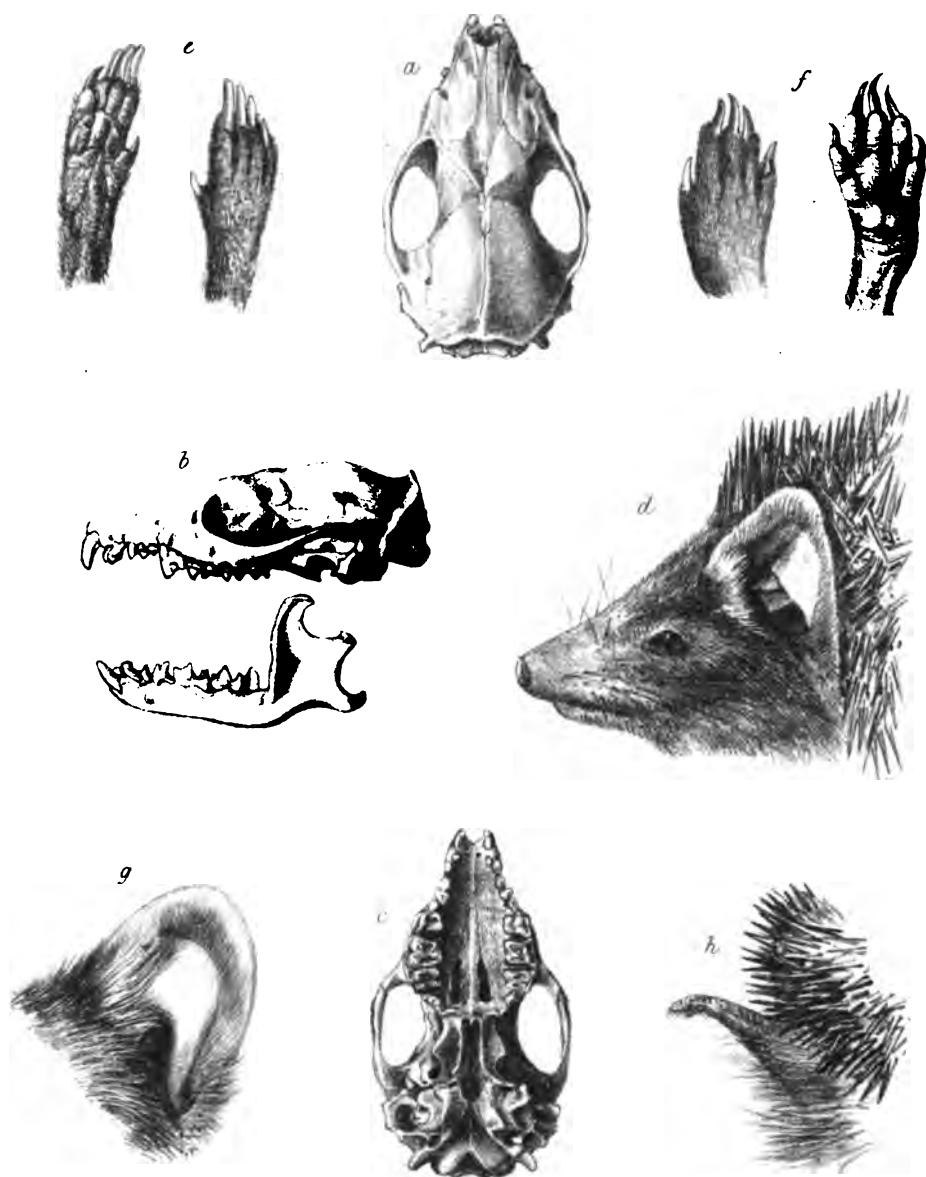
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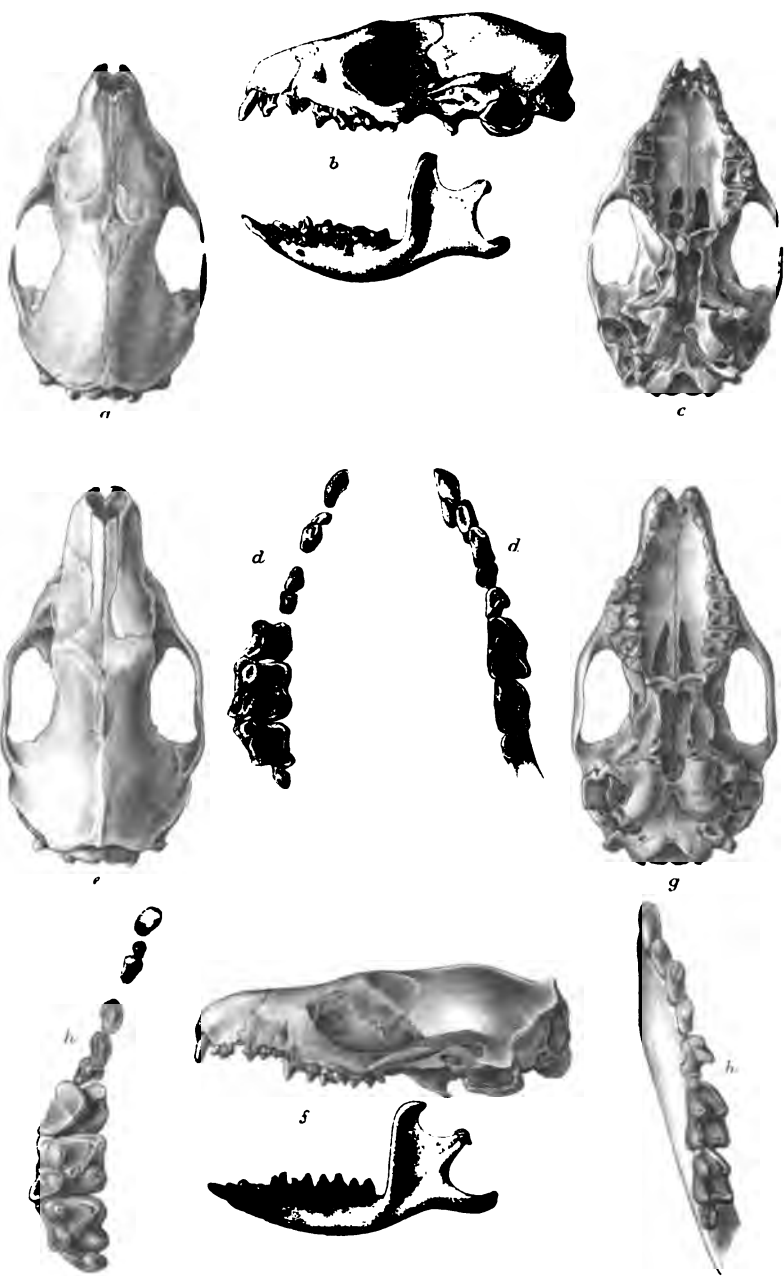
S. Sengfield lith.

Calcutta.









S. Sedgfield lith.

Calcutta



J. Smith del.

Hanhart imp.

PRIONODON MACULOSUS.





J. Crist lith

Hanhart imp

SCIURUS RUFIGENIS



J. C. Smith del.

H. C. Smith imp.

SCIURUS RUFIGENIS



Godwin lith

Hartnup imp

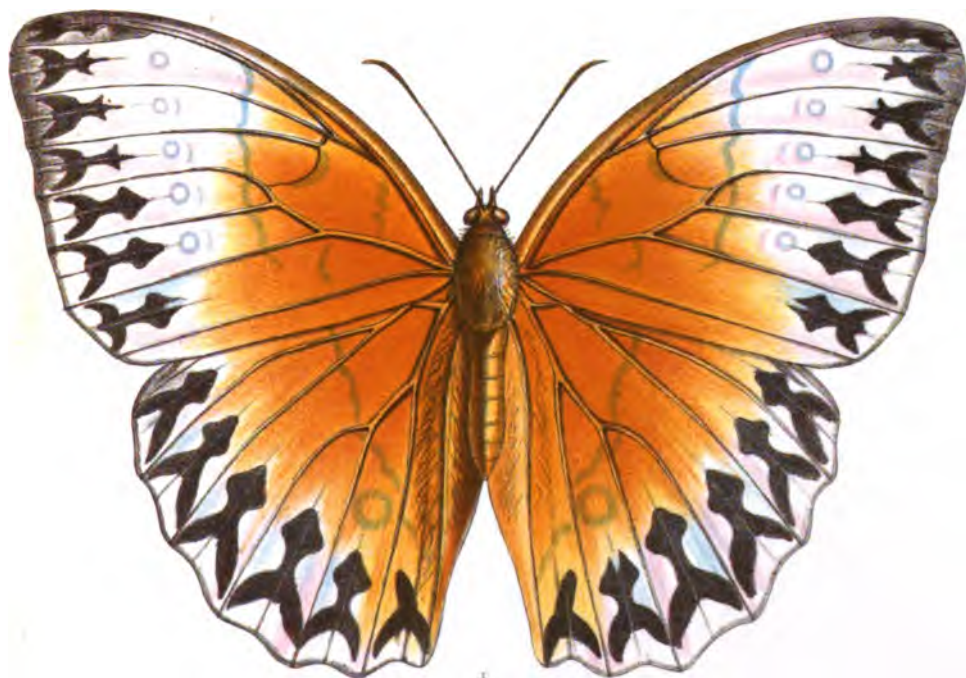
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J Smit lith

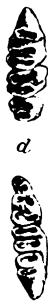
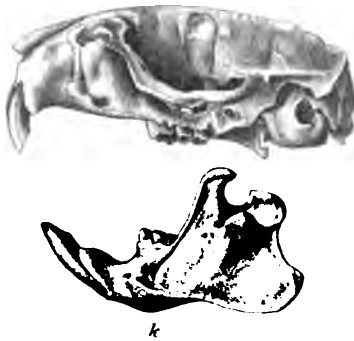
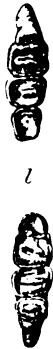
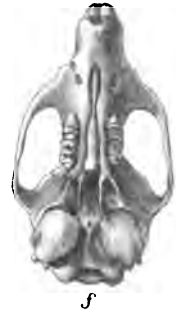
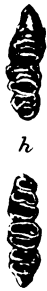
Hanhart imp

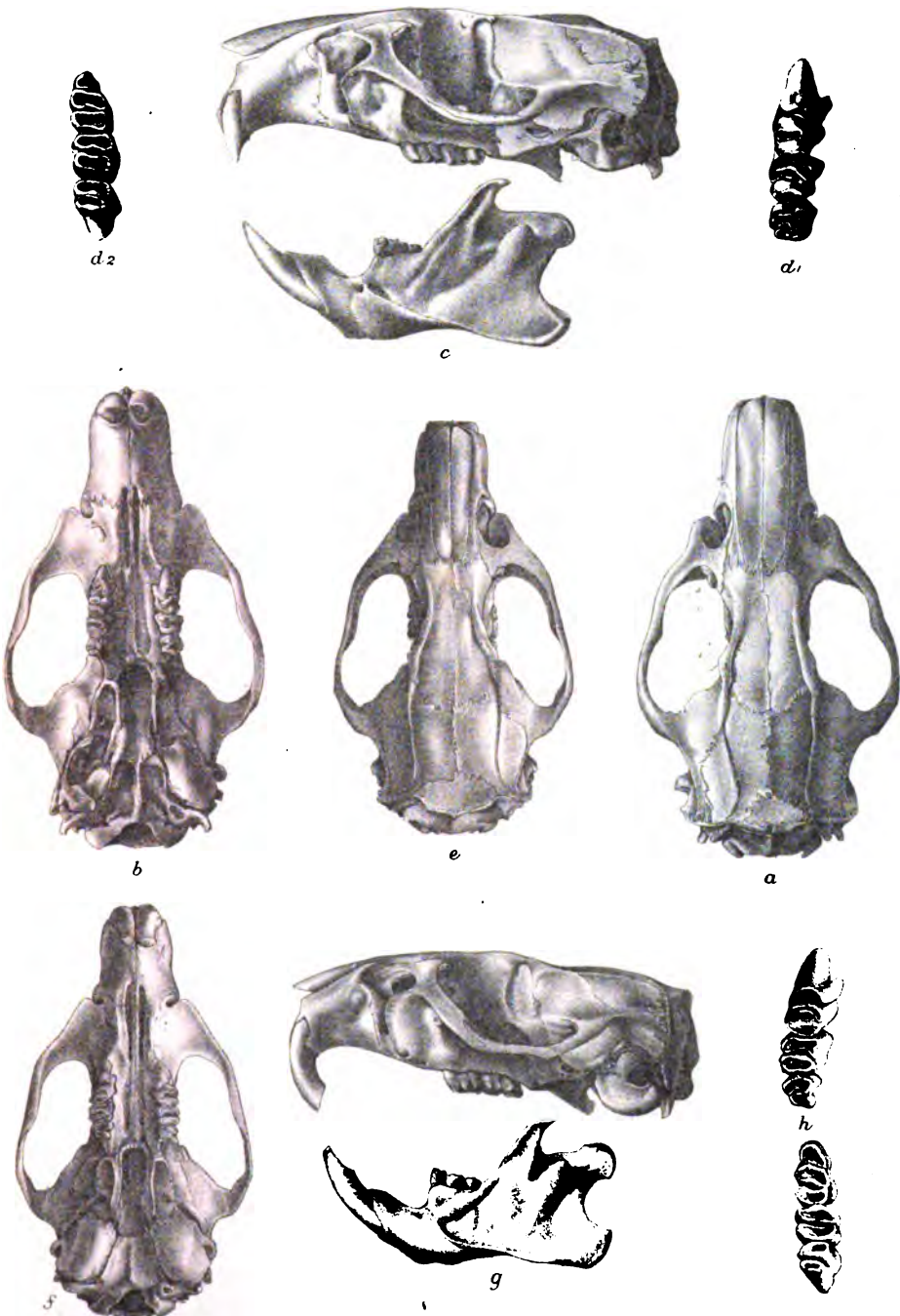
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THAUMANTIS LOUISA,

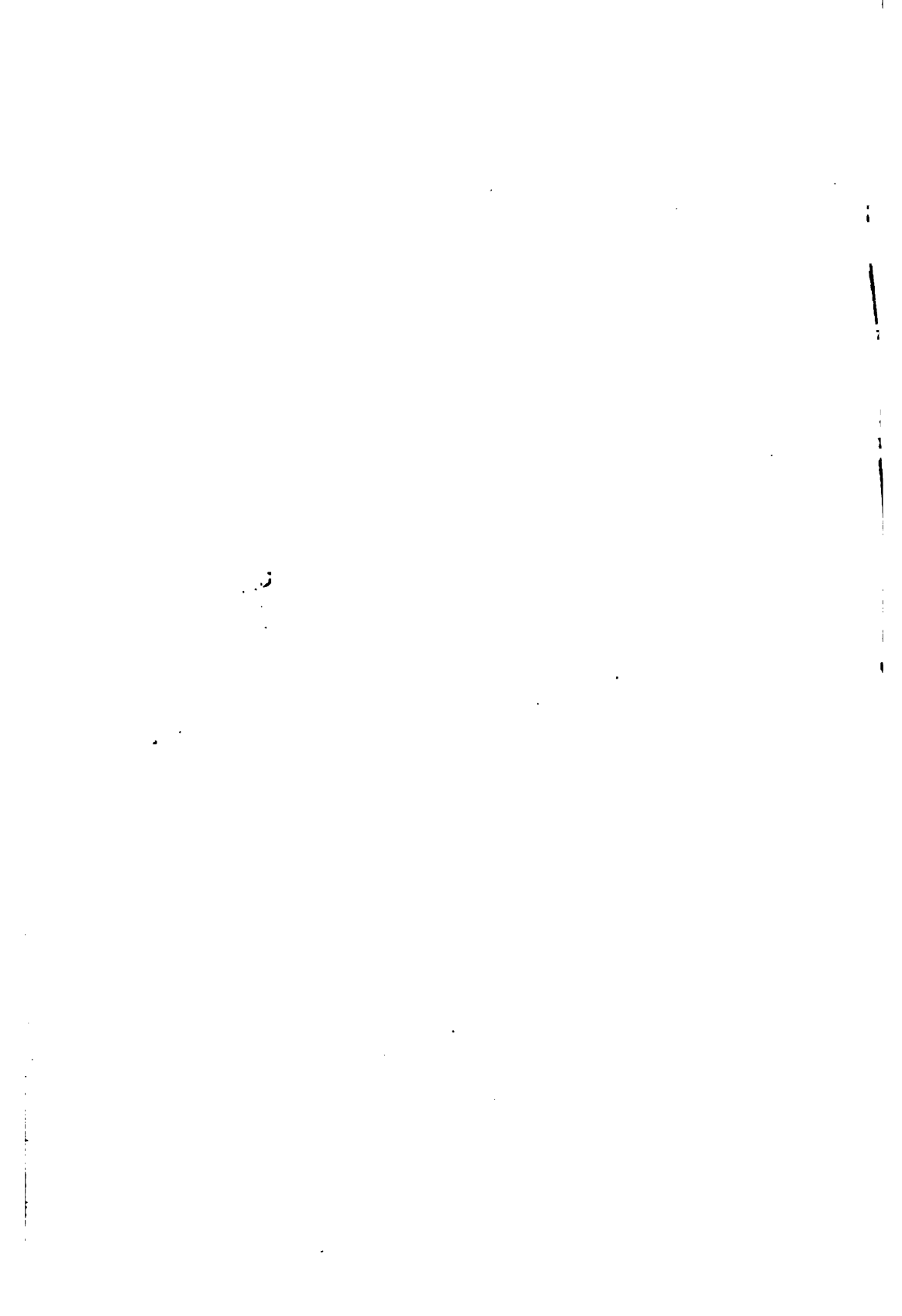
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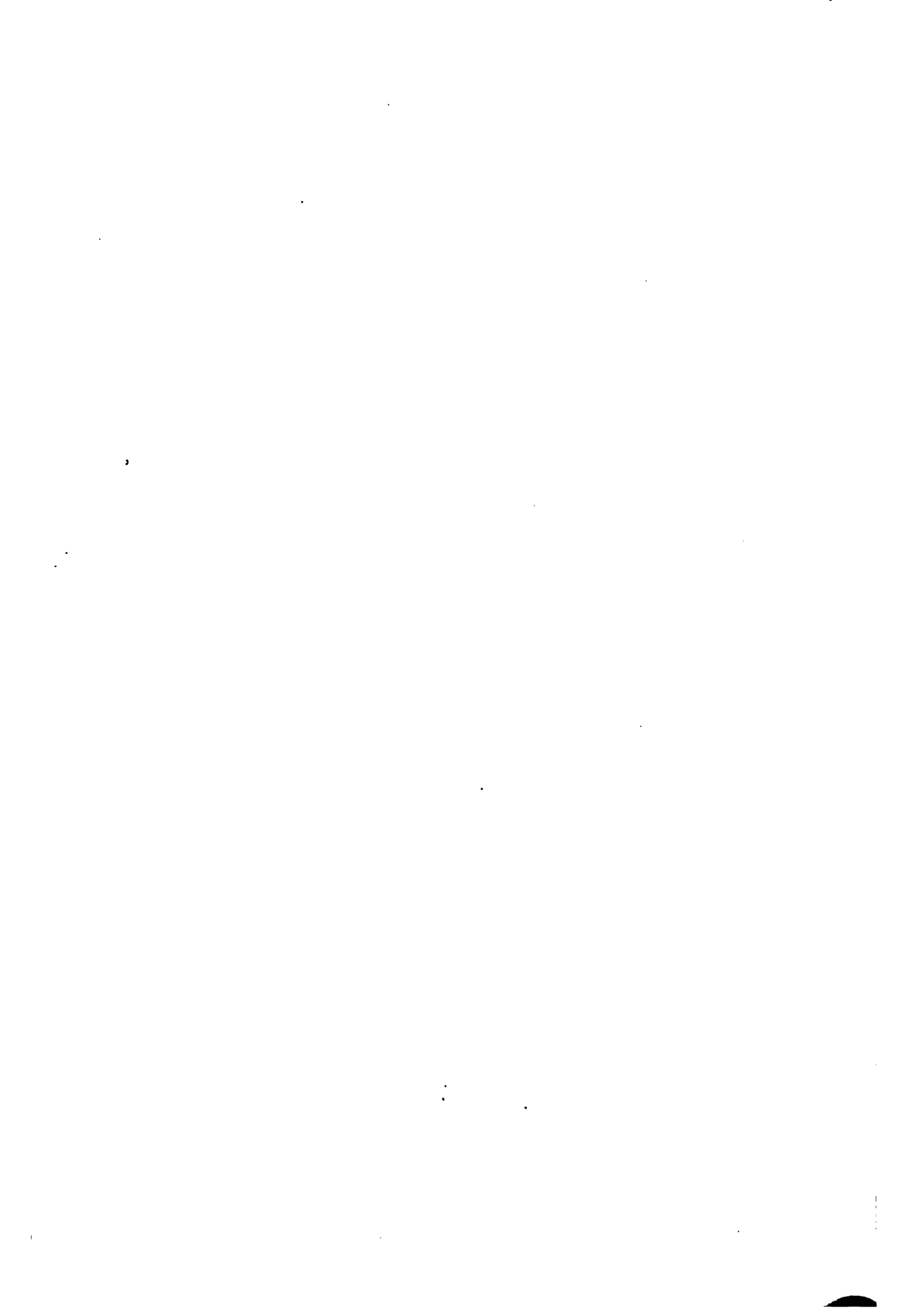


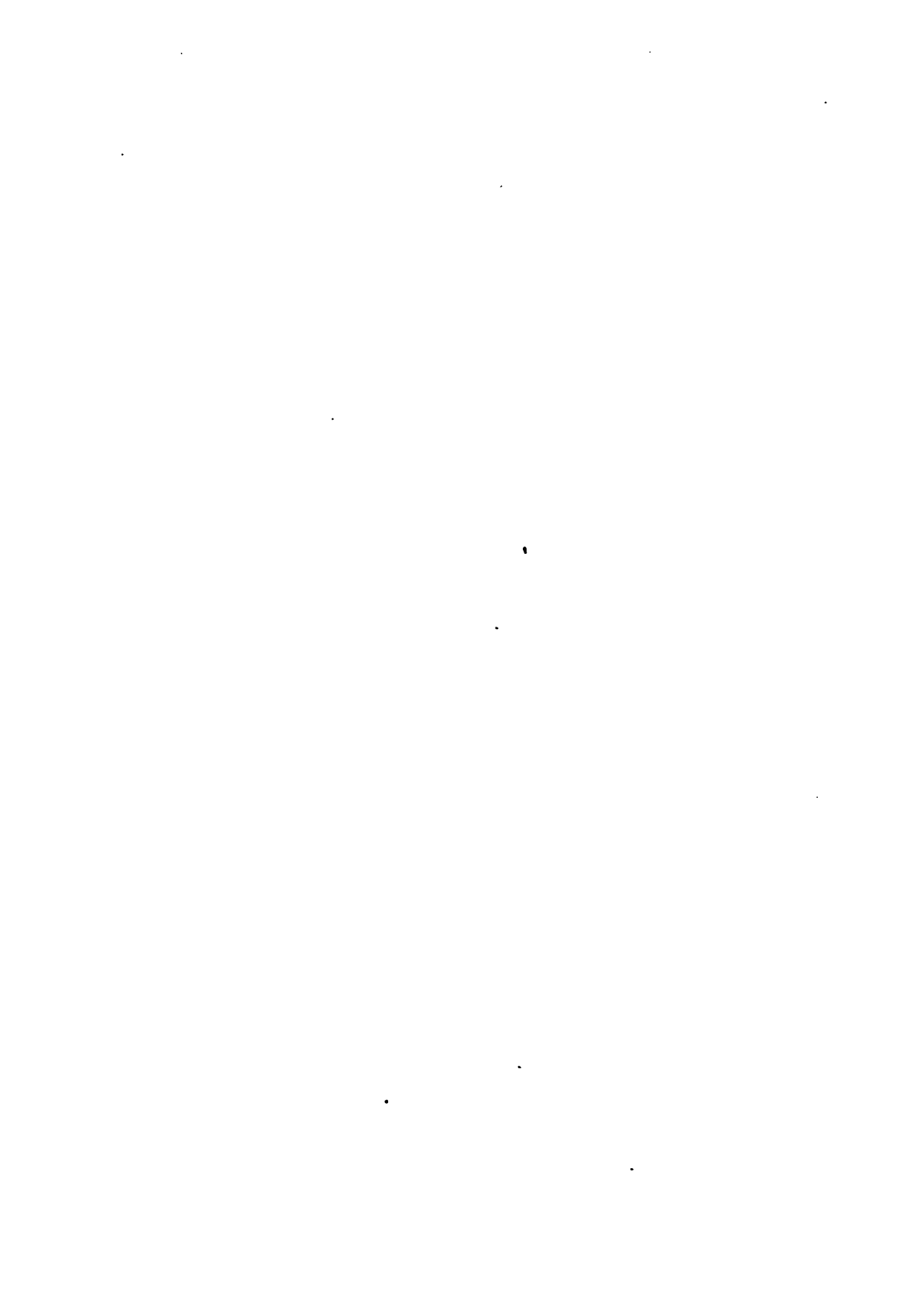


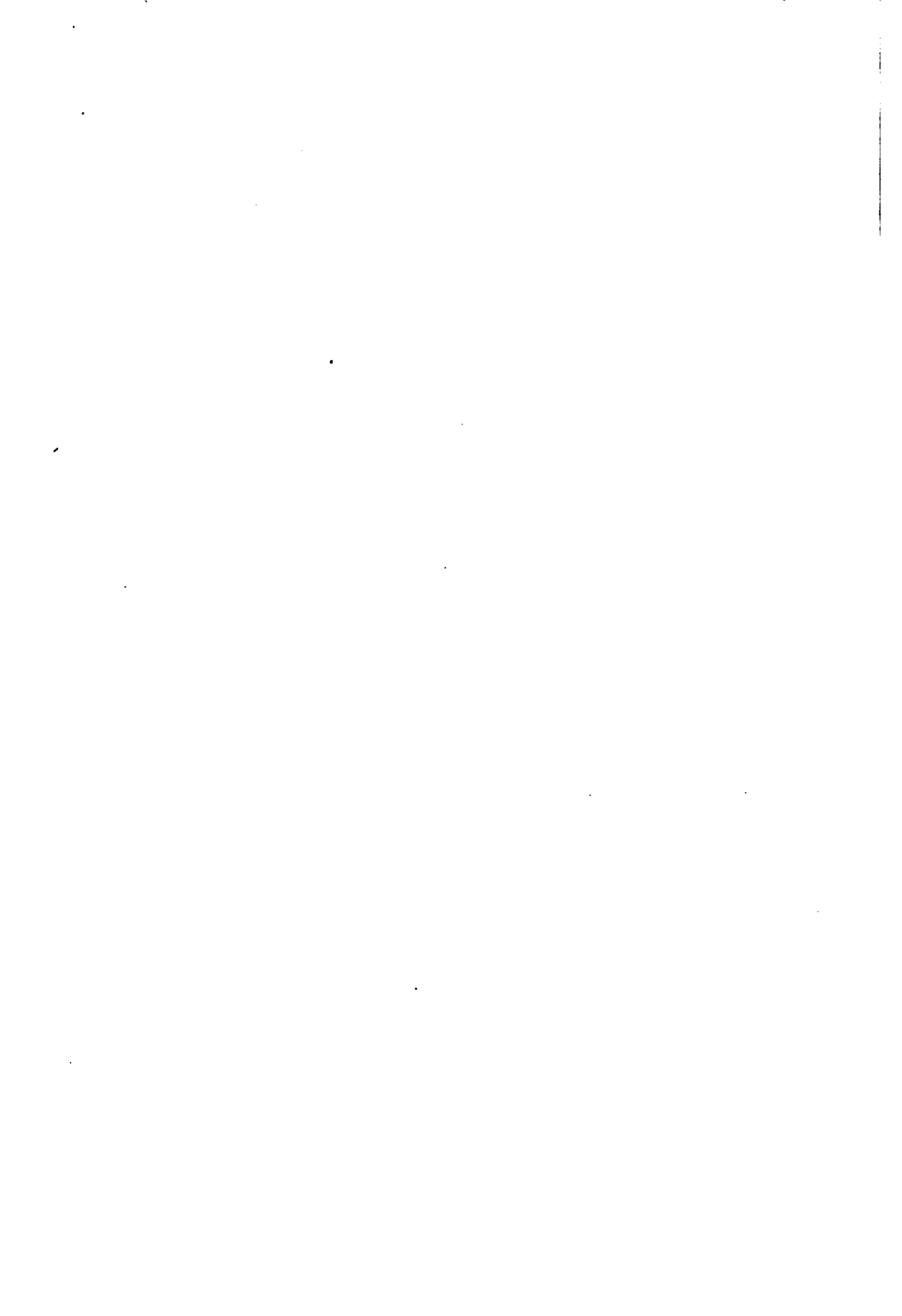
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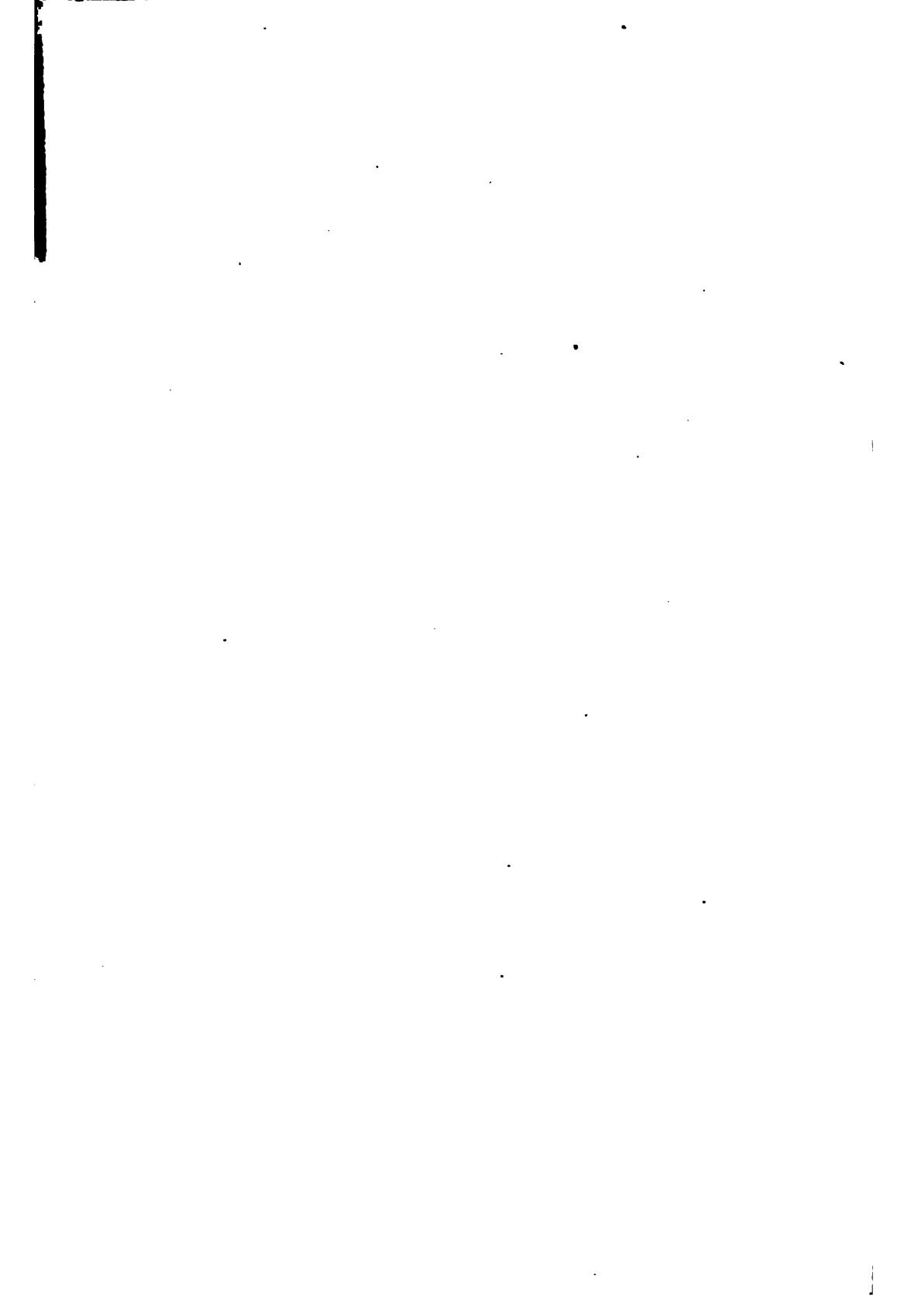
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